Standardization

News Magazine of the American Standards Association, Incorporated

A laminated glass "sandwich"—it's worth your life! (page 144)

JUNE 1950

Marginal Notes

Safety Glass Protects the Public—

This issue features an American Standard responsible for protecting the public for the past 13 years (pages 144-151). Many serious injuries from flying glass have been prevented, all agree, but no specific figures are available. Higher speeds, increased volume of traffic, new cross-country speedways invalidate comparison of today's accidents with those of the 1930's.

Harold F. Hammond, chairman of the committee that prepared the new edition of the safety glass code, knows problems of motorists, traffic experts, and auto manufacturers. He is manager of the Transportation and Communication Department of the Chamber of Commerce of the United States, and graduate of the Bureau of Traffic Research. He has been traffic engineer for the Massachusetts Committee on Street and Highway Safety, director of the Traffic and Transportation Division of the National Conservation Bureau, and transportation consultant to the Office of Defense Transportation, Norfolk, Virginia, naval operating base. He is past president of the Institute of Traffic Engineers, and author of publications on transport.

Chase-Statler, Wash., D.C.

Harold F. Hammond

Pittsburgh's Conference—In Our July Issue

Too late for this issue of STANDARDIZATION, an important meeting of

the Company Member Conference was held in Pittsburgh May 17 and 18. This was the first visit of the Conference to the home town of ASA's president, T. D. Jolly. The railway strike was settled just in time to revoke last-minute cancellation notices, and permit company representatives from the entire eastern section of the country to enjoy Pittsburgh's hospitality. The meeting will be reported in our July issue.

J. G. Henderson of the ASA Chemical Committee—

Union Carbide and Carbon Corporation's J. G. Henderson is the man elected by the new Chemical Industry Correlating Committee (page 160) to be responsible as chairman for the committee's effective operation. Mr Henderson has worked in the Carbide and Carbon Chemical Division for 20 years, has been head of the Standards Section of the Engineering Department for 15. He is a member of the National Society of Professional Engineers, and member and past director of the West Virginia branch of the Society. He is author of several papers on process equipment design, metallurgy, and welding. He is a member of the American Welding Society.

Our Front Cover

The laminated glass "sandwich" that is worth your life is, of course, the modern car windshield. The cover shows an operator at the Ford glass conveyor line spotting and matching one piece of plate glass on top of another with the plastic material inserted between the two plates to form the laminated "sandwich". Just published is a new American Standard covering this important automotive glazing. Turn to page 144 for a descriptive picture story. Cover photo from Ford Motor Company.

Opinions expressed by authors in STANDARDIZATION *are not necessarily those of the American Standards Association.*

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Standardization is dynamic, not static. It means not to stand still, but to move forward together.

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ASA
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AMERICAN WAR STANDARD

Z54.1-1946

Safety Code for the Industrial Use of X-Rays

Approved

April 15, 1946

AMERICAN STANDARDS ASSOCIATION

Foreword

USE OF X-RAYS

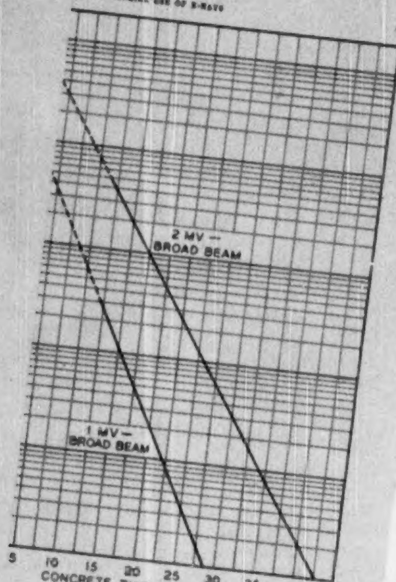
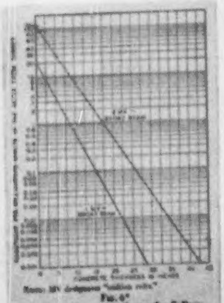


FIG. 6

(G. Singer, C. B. Braestrup, and H. O. Wyckoff)

Concrete Absorption Curves for X-Rays Generated at 1-Million Volts and 2-Million Volts

(See page 35)



Note: MV designates "million volts"

FIG. 6*

Concrete Absorption Curves for X-Rays Generated at 1-Million Volts and 2-Million Volts

(G. Singer, C. B. Braestrup, and H. O. Wyckoff)

FIG. 8

Target Distance for Primary and Secondary Protective Barriers

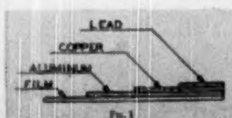


FIG. 1

Metallic Marker for Film Monitoring

Court Decision Based on American Standard

A COMPANY won its case in an appellate court recently because it could show that its operation of x-ray equipment was in accordance with the American War Standard Safety Code for Industrial Use of X-Rays. The decision was made in the case of a claim for damages for what the plaintiff claimed were injuries due to harmful exposure to roentgen rays from operation of a fluoroscope. The plaintiff claimed that the employer had been negligent in providing proper protection.

Since testimony showed that the construction and installation of the x-ray equipment was in accordance with the American War Standard Z54.1-1946, and the quantity of roentgen rays that penetrated the room in which the operator worked was considerably less than the permissible dosage recognized in the standard, the claim for damages was refused by the trial court. The appellate court affirmed the judgment of the lower court.

Experts Drafted Code

The American War Standard Safety Code for the Industrial Use of X-Rays, Z54.1-1946 was prepared by a committee under the wartime procedure of the American Standards Association. This committee included experts in the use of x-rays for industrial purposes, medical experts thoroughly familiar with the effect of x-rays on the human body, scientists well versed in new developments in radiology, representatives of manufacturers of x-ray equipment, representatives of the Army and Navy, and of state health departments.

The code was recognized in this case as "establishing the standard of construction and operation of fluoroscopes in businesses comparable to the defendant's."

The case as reported in the Journal of the American Medical Association *(February 25) is reproduced in full:*

Fluoroscope: Standards for Use in Industry.—The plaintiff sued for damages for injuries allegedly sustained after she had been employed by the defendant to operate a fluoroscope. From a directed verdict in favor of the defendant, the plaintiff appealed to the superior court of New Jersey, appellate division.

The plaintiff was employed by the defendant corporation to fluoroscope rubber beltings to determine whether there were any defects in them. The x-ray department, where she was employed, consisted of two rooms, one wherein the fluoroscope was located and an adjacent room where she operated it. The rubber belts were placed on pulleys in the room where the fluoroscopic machine was located, outside of which room there was a control box from which the plaintiff operated the machine. She operated the machine only in the outside room. By looking through a leaded glass window located in the wall of the lead lined room and above the control box, the plaintiff viewed the fluoroscopic machine while it was in operation. When she had completed the viewing she would stop the machine, go inside with a helper to take the belt off, change its position and inspect it again from the outside room in the same manner. The machine was operated at a kilovoltage of 85 to 110 and at a milliamperage of 4 to 5. The plaintiff satisfactorily passed a physical examination at the defendant's plant hospital at the time of her employment. Prior to that time she had enjoyed good health. The plaintiff contended that the proofs established a prima facie case that the impairment of her health, described as premature menopause and telangiectasis in the central portion of her face, was attributable to the roentgen rays to which she was exposed and that the negligence of the defendant was the proximate cause of her injuries.

The plaintiff offered in evidence the "American War Standard Safety Code for the Industrial Use of X-Rays," approved May 31, 1945, and a revised safety code for the industrial use of x-rays approved April 15, 1946, originated by a group of recognized scientists through the American Standards Association. These codes established the roentgen as the international unit of quantity used as the symbol for the measurement of roentgen rays and gamma rays and classified different types of installations, viz.: class A, class A-1, class B, class B-1 and all other installations, which do not conform to these four, known as class C. The proofs reasonably established that the defendant's equipment in the construction and operation of its fluoroscopic apparatus qualified as class A, totally protective installation, said the court. One of the requirements of the code necessary to qualify for class A installation provides: "(*b*) The dosage rate in milliroentgens per hour at any accessible point outside of the protective enclosure is not greater than 12.5 mr per hr (0.0125 r per hr) when the radiation beam is adjusted to give the maximum dosage rate at the point in question, with the x-ray generator running at its rated capacity." The exposure of a person for an eight hour day, six day week, to 12.5 milliroentgens per hour, in the circumstances here, is the permissible daily dose.

The plaintiff argued that she established a prima facie case of negligence against the defendant as the proximate cause of her injuries, that, in the light of the proofs, the questions as to whether defendant's installation was in conformity with the standard practice in comparable industry, whether there was any negligence chargeable to defendant in the operation of the machine and whether such negligence was the proximate cause of plaintiff's injuries raised factual issues which should have been submitted to the jury for its determination and contended, therefore, the court erred in directing

(Continued on the next page)

a verdict against the plaintiff.

It is the general rule, said the court, that the mere fact that an instrumentality may become dangerous to others does not constitute its possessor an insurer against injury that may result therefrom. Liability for negligence in respect to dangerous instrumentalities, as liability for negligence generally, arises from the failure to use due care. In other words, the court continued, the essential requirement of due care in the circumstances necessarily implies that the care required to prevent injury to others in using a dangerous instrumentality is of a great or high degree and every reasonable precaution suggested by experience and the known dangers of the subject ought to be taken.

The plaintiff introduced in evidence the code and revised code adopted by the American Standards Association as establishing the standard of construction and operation of fluoroscopes in businesses comparable to the defendant's. The testimony reveals, said the court, that the defendant's construction and installation fully complied with such standard; that the defendant engaged a competent and recognized expert of many years experience in the field of roentgen rays, radium and radiations emitted by radioactive materials to advise and counsel defendant as to the construction of the two rooms for the installation of the fluoroscope and its operation, and tests were made by him both prior to and subsequent to its operation; that the construction, installation and operation were in accord with this expert's recommendations; that all necessary precautions were thus taken for the reasonable safety and protection of the operator of the machine; that the quantity of roentgen rays that penetrated the room where the plaintiff operated the machine was considerably less than the permissible dosage of roentgen rays that might be safely absorbed by the human body under the conditions prevailing at the place of employment. On the contrary, the plaintiff, as was its duty, did not establish a prima facie case of actionable negligence against the defendant by proving that its installation of the fluoroscope and construction of the two rooms for its operation did not conform to the standard of such installation as established by the codes heretofore mentioned and recognized as standard practice or that its subsequent operation was not in conformity with such standard of usage or that it failed to exercise "that degree of care, or that manner of fulfilment of duty, which comprehends a circumspection, a foresight, a prevision which has due and proper regard to reasonably probable contingencies." The plaintiff's proofs, continued the court, proffered through the testimony of experts, considering them in the most favorable light to which they were entitled, sought to establish that the defendant's installation was not in conformity with a standard of their own and which they asserted should have been established by defendant, rather than testifying that the defendant's installation and its operation were not in conformity with the standard practice in the industry. This is contrary to the recognized rule and, if followed, would mean that industrial concerns would be subjected to the mere caprice of juries and held accountable for actionable negligence regardless of whether or not they adopted a recognized standard of installation.

A careful review of their testimony, concluded the court, convinces us that the plaintiff failed to make out a prima facie case that the defendant's installation and operation of the fluoroscope did not conform to the standard set up by the codes offered in evidence by the plaintiff and to the standard practice for such business. It follows that there was no inference of negligence chargeable to the defendant for the plaintiff's injuries that could be drawn from the proofs; consequently, no factual issue of actionable negligence against the defendant was raised for the jury's determination.

The judgment of the trial court in favor of the defendant was accordingly affirmed.—*Rakowski v. Raybestos-Manhattan, Inc., 68 A. (2d) 641 (N. J., 1949).*

Plastering Industry Notes Standard Milestones

The next 50 years will be easy, the lathing and plastering industry believes. More technical and product improvement has come about in the industry in the five years of the latter part of the first half century than in hundreds of years before, it reports. Among milestones of the past 50 years (as published in *Plastering Industries*, February 1950) are simplification practices and evolution of American Standard specifications. Milestones during 1900-1949 are reported by the industry as:

Development of gypsum lath

Improvement in metal lath, accessories and trim, base

Development of lightweight perlite, pumice, and vermiculite aggregates

Improvement in acoustic plasters

Introduction and development of mechanical mixers for plaster

Introduction and development of timesaving scaffolding, lightweight tools and standardized equipment

Simplification of metal lath line to avoid excessive types and sizes

Development of use of gypsum plaster with controlled set and working characteristics to suit aggregate, climatic, and water conditions nationwide

Development of improved limes (autoclaved, pressure-type and processed limes to develop for job use in shorter time)

Introduction to craft of mechanical means for application of base coat plaster

Evolution of American Standards specifications for lathing and plastering

Development of gypsum lath

Improvement in metal lath, accessories and trim, base

Development of lightweight perlite, pumice, and vermiculite aggregates

Improvement in acoustic plasters

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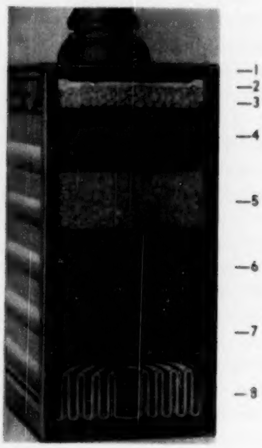
Introduction to craft of mechanical means for application of base coat plaster

Evolution of American Standards specifications for lathing and plastering

Canister Colors Protect Workmen

GAS mask canisters that filter and neutralize the effect of different types of dangerous gas, vapor, or smoke can be easily identified by special colors that have just been carefully checked and brought up to date in a 1950 edition of a 20-year-old American Standard. In industrial plants where high concentration of chemicals are part of normal routine, in mining operations, in public utility work, in rescue work, and in fighting fires, the standard colors make possible quick and easy selection of the right gas mask for each dangerous gas or vapor. They are not intended for use in connection with military activities.

The gas mask itself is a device constructed to exclude all air from the respiratory system of the person wearing it, except air drawn through a canister. This canister forms part of the gas mask and contains special materials to neutralize, absorb, filter, or catalyze the harmful substance. Canisters containing special neutralizing or catalyzing materials must be provided for each type of harmful gas, vapor, smoke, or mist. A canister prepared especially to protect against chlorine gas may provide little or no protection against some other gas.



1. SPRING holding cotton pad in position.
2. COTTON PAD for retaining chemicals.
3. PURE ANHYDROUS CALCIUM CHLORIDE, which acts as a dryer, preventing moisture from reaching "Hopcalite".
4. "HOPCALITE" which acts as a catalyst to convert carbon monoxide (CO) to carbon dioxide (CO_2) by uniting the oxygen (O_2) in the air to the carbon monoxide (CO) thus forming carbon dioxide (CO_2) which is a relatively harmless gas. "Hopecalite" also has considerable absorbing powers for organic vapors and acid gases.
5. SILICA GEL which acts as an absorber of ammonia; also as a dryer, preventing moisture from reaching "Hopcalite".
6. IMPREGNATED ACTIVATED CHARCOAL and CAUSITE for absorbing organic vapors and acid gases.
7. IMPREGNATED ACTIVATED CHARCOAL and CAUSITE for absorbing organic vapors and acid gases.
8. CELLULOSE FILTER for filtering toxic dusts, fumes, mists, fogs, and smokes.

Colors that identify the type of atmospheric contaminant against which a canister is designed to serve as a protection have been in use for many years. In 1923 a Bureau of Mines publication carried Schedule 14A, Procedure for Establishing a List of Permissible Gas Masks. In 1930 the colors were approved as American Standard after they were recommended by a committee including representatives of gas mask canister manufacturers, governmental officials, insurance safety groups, the American Gas Association, the American Society of Mechanical Engineers, and federal government departments. The committee's work was sponsored by the National Safety Council.

The American Standard Safety Code for Identification of Gas Mask Canisters, K13.1-1950, is available from the American Standards Association at 35 cents for single copies. For orders of ten or more copies:

10- 24	\$.28
25- 99	.24½
100-249	.22½
250-499	.21
500-999	.19

1000 and over—prices on request.

The fact that these colors have been recognized as standard has helped to prevent confusion in markings used by the different manufacturers.

In a new edition, just completed, the list of colors approved in 1930 has been extended to cover canisters for protection against two additional types of gases. These are hydrocyanic acid gas and chlorine gas. Canisters for protection against hydrocyanic acid gas are to be painted white with ½ inch green stripe around the canister near the bottom. For protection against chlorine gas the canister is to be white with a ½ inch yellow stripe around the canister near the bottom.

Sample canister, courtesy Mine Safety Appliances

Other colors are assigned as follows: Acid gases, white; organic vapors, black; ammonia gas, green; carbon monoxide, blue; dusts, fumes, mists, fogs, and smokes in combination with any of the above gases or vapors, ½ inch contrasting black or white stripe around the canister near the top; acid gases and organic vapors, yellow; acid gases, organic vapors, and ammonia gas, brown. Any canister that is especially constructed to protect against all these contaminants is identified as a "Universal Gas-Mask Canister" and painted red.

In addition to the color, canisters must also be marked: "Canister for (with the name of the atmospheric contaminant)." As an extra precaution the following wording is to appear on the canister label: "For respiratory protection in atmospheres containing not more than .... percent by volume of .... (Name of atmospheric contaminant)."

(*Continued on page 156*)

Library of Standards Aids Export Trade

Do foreign specifications affect American products to be sold in foreign markets? Do any of the several thousand of foreign countries' standards and specifications apply to my products? If so, what are they and how would they affect the design and manufacture of these products? Are there national standards on shoe sizes? On lumber grades? On gear tooth forms? On dimensional tolerances for ball bearings? How do safety codes affect the design of machines?

The answers to more than 80 percent of all questions of this type on specific materials and industrial products are being supplied every day to members of the American Standards Associations through one of the most unique libraries in the United States. Often the answers are given within minutes when received by telephone.

On a typical day Eugene Somoff, technical service engineer, gave different inquirers the Belgian requirements for surgeons' rubber gloves; the specifications for filter clay for oil refining service in Venezuela; and British specifications for Leclanche cells ordered by the Siamese government. A New York retail jeweler was able to sell a finger ring after getting a translation of British finger ring sizes into the standard sizes used in the United States.

Billion $ Per Month

Why should American industry be concerned over foreign countries' standards? Primarily because the total value of American exports was slightly more than a billion dollars per month during 1948 and 1949. This volume permits foreign countries to demand goods that meet their specifications or the specifications of other countries from whom they have bought before. Of the above amount, one-third went to European countries in 1948, one-fourth to South American countries, Central America, and Mexico, and one-sixth to Asia.

Total exports of industrial and other machinery in 1948 were worth

Photo by Gene Dauber

Eugene Somoff, technical service engineer, can read nearly every foreign language standard in the library of American Standards Association to answer questions of inestimable value for firms doing an export business. Librarian Hertha Wiegman, in the background, finds all of the answers to questions on standards used by American industries.

$1,783,000,000. The automotive industry exported products worth $1,564,000,000. Exported steel mill products and apparatus were worth $862,000,000. Industrial Chemicals worth $293,100,000 were exported. Other exported products of all classes except foods were worth more than $5,000,000,000 in a single year.

To make its valuable service to industry possible, the ASA library has collected nearly 50,000 domestic and foreign standards. Domestic standards include all of those developed by national organizations such as American Society for Testing Materials, American Petroleum Institute, American Society of Mechanical Engineers, National Electrical Manufacturers Association, Federal Specifications Board, Army, Navy, Air Force, and many others. Many of these standards have been accepted as American Standards, thus assuring the broadest possible acceptance and application in industry.

Librarian Hertha Wiegman, who has had more than 20 years experience with published standards, is an authority on all standards printed in English. Her assistant, Catherine Erskine, is also capable of answering many questions on standards.

All foreign language standards except Chinese and Japanese (which have English indexes) can be translated by Mr Somoff. Although this service does not include complete translations, questions are answered on whether there is a standard on a given subject, what is the general content, and what certain details are. Copies of standards may be provided for further translation, when required.

Information on foreign standards is supplied in four ways: by telephone, by mail correspondence, by sale of copies of the standards, and by sale of photostats. Two copies of standards are usually kept on file, one for reference and one to sell if called for. When one is sold, the library immediately orders a new copy, which is purchased at established prices. Approximate price of foreign standards is 50 cents for a single page, and 25 cents for each additional page in the standard. Photostats are made when extra copies of standards are not available. Copies of standards are also loaned for photostating.

Most recent inquiries on foreign standards have applied to European and South American countries, with which the volume of export trade is largest. The probability of there being a foreign standard applicable to products purchased in the United States is greatest in European countries. This is shown by the fact that the ASA library has files of 7000 German standards, 3000 French standards, 2000 British standards, and 3000 of the most important of 8000 USSR standards.

Nearly all European countries have standards that would apply to

(*Continued on page* 158)

How ASA Procedures Work for Industry

Reprint of Appendix A "The Value of American Standards to the Members of NEMA" from the pamphlet, *NEMA Membership in ASA and what it means to NEMA members,* published by the National Electrical Manufacturers Assn.

INDUSTRIAL standards form the cornerstone of mass production and affect all phases of the manufacturing process. Economies are realized by the application of standards to the design, production, and distribution problems of industry. Simplification of such items as design specifications, material purchase specifications, storage and issuance of materials and parts, productions, plant maintenance, inspection and test and, finally, of sales, brings the economic value of sound American Standards close to every manufacturer. In addition, safety standards help to reduce the time lost through accidents and to increase the productivity of workers.

American Standards are important to the manufacturers of electrical equipment in all phases of their business. Through the facilities of the American Standards Association, Incorporated, NEMA and purchasers of electrical equipment meet together for the purpose of developing standards which are mutually acceptable. This means wide acceptance of the standards among consumers, as well as among producers. It means help to manufacturers in establishing a "common language" to minimize misunderstandings between the manufacturer and his customer.

Of importance and concern to almost all NEMA members in selling their products are such American Standards as the National Electrical Code and the National Electrical Safety Code. These codes, generally adopted in some manner under state laws and local ordinances throughout the country, govern the installation of electrical equipment and affect the installation of wire, wiring materials, motors and generators, appliances, welders, x-ray equipment, control equipment, industrial apparatus, lighting equipment, fuses, and circuit breakers—in short, practically all electrical equipment within the scope of NEMA.

It is essential to all members of NEMA that such codes be developed under the procedures of the American Standards Association, Incorporated. The manufacturer's representation is a numerical minority in the code-forming bodies. In many cases, restrictive provisions are recommended and might conceivably be approved without the protection afforded by the "consensus principle" of ASA. Were this not done, each municipality would make its own code, and there would be almost as many different codes as there are cities. With such "home rule," manufacturers of electrical equipment would be confronted with the impossible situation of trying to supply something different to almost every community in the country. One specific example may illustrate the importance of this procedure to NEMA.

NEMA Viewpoint Considered

In 1945, at the meeting of the Electrical Committee of NFPA, a proposal was advanced that would have required the use of 3-pole overcurrent protection in all 3-phase motor starters supplied for delta-wye or wye-delta 3-phase, 3-wire systems. The proposal was adopted by the Electrical Committee at that meeting over NEMA's objection. As a result of subsequent NEMA protest, this restrictive provision was withdrawn and did not appear in the National Electrical Code as approved as an American Standard. Inclusion of this provision in the National Electrical Code would have meant a hardship to manufacturers of industrial control equipment and increased cost of industrial installations with no compensating increase in safety. The latest Code revision contains recommendations covering the use of 3-element starters that provide protection in those isolated cases where such protection is needed and that are satisfactory to the electrical manufacturers concerned.

Similarly, but in a somewhat lesser degree, building codes, other safety codes, and other standards concerning the construction and use of nonelectrical equipment may affect the installation or use of electrical apparatus. Plumbing codes may affect the installation of water heaters or food waste disposal units; building codes may affect the use of arc welding equipment in building construction; and health and safety codes may affect the installation of industrial x-ray equipment.

Not long ago, the American Standard Safety Code for Bakery Equipment was developed under the sponsorship of the American Society of Bakery Engineers. Electrical equipment, being components of the major equipment and of somewhat minor concern to the bakery engineers, were not only inadequately covered in the proposed standard, but the requirements given were impracticable. The Society of Bakery Engineers was reluctant to alter the proposed standards. A fortunate meeting of members of the NEMA Codes and Standards Committee with officers of the American Society of Bakery Engineers resolved the differences, and a standard acceptable to affected electrical manufacturers resulted. This is but one of many such cases where, without ASA procedures, standards developed by other organizations would have been unsatisfactory to electrical manufacturers.

These are all standardization projects in which NEMA plays an important part, either in their development or in reviewing proposed standards to see that a sound standard, electrically speaking, is developed. These national standards are developed under the procedures of the American Standards Association, Incorporated, which afford NEMA members, through NEMA, an opportunity to participate.

(Reprinted by permission of NEMA)

Year's Trial for Fluorescent Lamp Standards

Performance of lamps is controlled by ballasts—subject of proposed American Standard specifications to assure satisfactory light production and safety of fluorescent lamps

by E. H. Salter

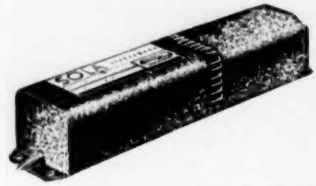
THE performance of a fluorescent lamp is dependent upon a combination of the lamp characteristics and the characteristics of the operating circuit. The characteristics of the operating circuit are largely those of the ballast or stabilizing element used with the lamp. This element frequently will determine whether the lamp will start properly, deliver its rated light output, operate for the expected number of hours—in other words, give satisfactory service to the ultimate consumer.

Specification in Use

Because of this situation, some 12 years ago, when the fluorescent lamp was first used commercially, the manufacturers of Mazda Lamps provided a specification for fluorescent lamp auxiliaries in order to be able to guarantee lamp performance. This specification formed the basis for a later cooperative effort between certain of the lamp manufacturers and ballast manufacturers, identified as Specification No. 6, which has been in active use since that time.

As lamps developed and multiplied in types and sizes, some of the provisions of Specification No. 6 became somewhat unwieldy. Ballast characteristics have always been specified in terms of lamp performance where a selected lamp is operated first from a "standard" ballast and then from the ballast under examination. "Standard" ballasts, however, have been defined in terms of lamp performance, and lamp characteristics in terms of operation from a "standard" ballast circuit. This tends to become a vicious circle with no one element tied down to serve as a reference point. The ballast manufacturers had been working on a possible specification for a "standard" ballast in the hope of resolving some of these difficulties when ASA Sectional Committee C78 produced its first Proposed American Standards for Dimensional and Electrical Characteristics of Fluorescent Lamps. Shortly thereafter Sectional Committee C82, Lamp Ballasts, was organized.

C82 was started then with the background of experience previously gathered through the use of Specification No. 6, with a wealth of new material made available through re-



Sola Electric Company

searches conducted by the several ballast manufacturers as individuals and collectively through Electrical Testing Laboratories, Inc. as well as the proposed electrical data on the lamps themselves arrived at in C78. All of this offered the possible development of a fresh approach to certain of the problems recognized in existing specifications. The possibilities have in each case been explored by working committees and in several instances a new and apparently better specification has been developed.

Three Lines of Approach

In undertaking this assignment it appeared desirable to break it into three separate lines of approach, all interdependent and yet each representing distinct phases in the development. Since the old standard ballast had been a source of difficulty, this

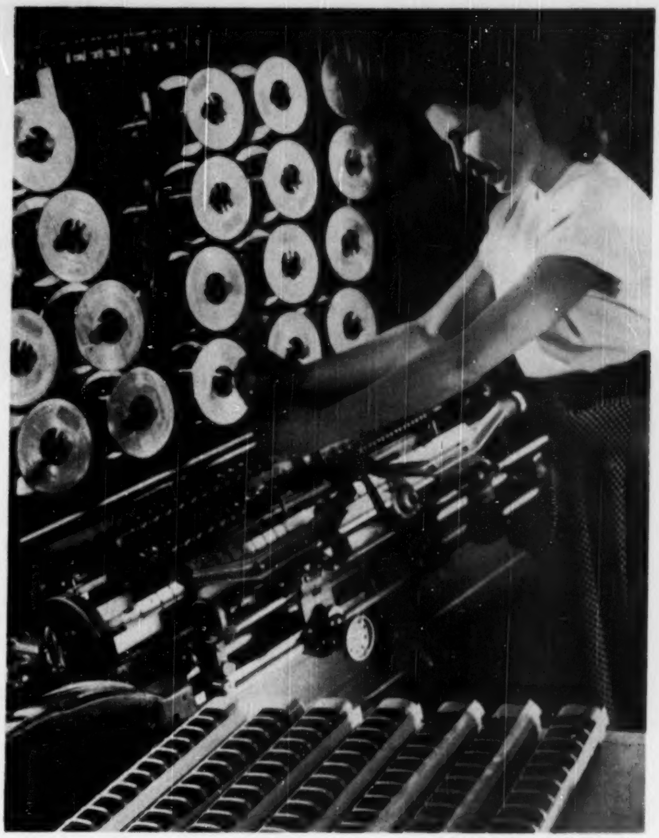
Mr Salter is research engineer with the Electrical Testing Laboratories, Inc, which for many years has carried out a testing program for the lamp industry. He served as chairman of the Sectional Committee on Lamp Ballasts, C82, which prepared the proposed new American Standards, and has been chosen by the lamp industry to represent the United States viewpoint at two international meetings this year. He visited London May 12 to attend the meeting of the International Commission on Rules for Approval of Electrical Equipment (CEE) and will attend the meeting of the Committee on Lamp Caps and Holders of the International Electrotechnical Commission at Paris in July.

The Proposed American Standard Specifications for Reference Ballasts, C82.3, and the Proposed American Standard Method of Measurement of Fluorescent Lamp Ballasts, C82.2, have been published for a one-year period of trial. They are being put into use in the ballast industry during this year's trial period. Copies may be obtained from the American Standards Association at 50 cents for C82.2 and 35 cents for C82.3.

was set up as a separate project. The general method of measurement of ballasts is again a specialized field of operation and this formed a second project area. Finally, and dependent upon the other two, though basically the sole reason for the existence of these other projects was that of the specifications for the lamp ballasts themselves.

Bed-rock of Specifications

The Proposed American Standard Specification for Reference Ballasts, C82.3, then becomes the bed-rock upon which ballast specifications are to be built. Here the performance characteristics of reference ballasts are definitely set forth, not in terms of lamp performance but in the usual electrical units used to specify such a circuit. The 60-cycle impedance of these reference ballasts is a determining factor in establishing the performance characteristics of the lamps to be used with them. A cooperative arrangement has therefore been set up with Committee C78 whereby, when a new lamp is added to their standards, a value for the impedance of the reference ballast is to be furnished Committee C82. Since a reference ballast of a definite 60-cycle impedance is readily produced in any laboratory, this then becomes the real datum point to which lamp and ballast performance can be referred.



Sylvania Electric Products, Inc.

Ballasts for fluorescent lamps are simultaneously wound in quantity. Ballast coil windings (foreground) are then sawed apart to provide individual ballasts.

Comparable Measurements

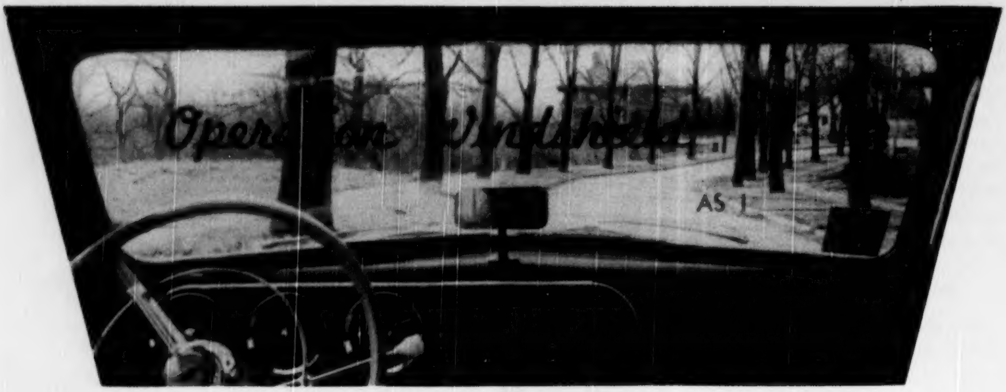
The particular operating characteristics of fluorescent lamps—high voltages and relatively small currents, voltages having almost square waveform, the effects of temperature and air movement, and other conditions peculiar to the fluorescent lamp—make it necessary to choose instruments carefully and to follow definite procedures if different groups are to obtain similar results in measurements. The Proposed American Standard Method of Measurement of Fluorescent Lamp Ballasts, C82.2, serves to codify experiences gained over about 12 years of such measurements in order to provide a reasonable degree of duplication and comparison between measurements.

These two proposed standards now are being published for a trial and criticism period of one year. No particular difficulty has arisen in their consideration, but the new ideas which have been incorporated must be given a reasonable trial.

Problems Being Solved

The Proposed American Standard Specification for Fluorescent Lamp Ballasts, C82.1, has not had as easy sailing. Specification requirements concerning ballast heating, lamp starting, and permissible distortion of the lamp current wave have been hurdles to clear. It appears safe to say now, however, that these difficulties are being resolved and that there is evidence that within another few months this third proposed American Standard may also be released for printing on a trial and criticism basis.

The application of these standards should then give assurance to the fixture manufacturer that the lamps and ballasts used in his fixtures will, under proper use conditions, give rated performance both as to light production and continued safe operation. The lamp manufacturer is given assurance as to the electrical operation of his lamps; the ballast manufacturer that ballasts will function properly. And the ultimate user should get more light for his money and that for a longer time.



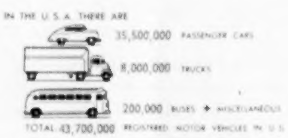
THOSE cryptic letters and numbers (AS 1, 2, 3, for example) that purchasers of new motor vehicles will soon find etched into windows and windshields have an important meaning for every car owner and rider. They mean that the safety glass or plastics used have met American Standard specifications and tests, agreed upon by a broadly representative committee as the minimum requirements needed to protect car, truck, and bus passengers.

"American Standard–Windshield"

The letters "AS-WS" have been seen on windshields since 1938. Because of those letters (standing for "American Standard—Windshield"), car owners have known that their windshield safety glass would not shatter in jagged, razor-sharp pieces; would not discolor after exposure to sunshine, heat, or rain; would not develop air bubbles, or separate from the plastic interlayer.

The fact that safety glass meets American Standard tests is not new. What is new is the fact that a 1950 edition of the American Standard recognizes many developments in the manufacture of safety glass and other materials since 1938. Several different types of materials including certain plastics are recognized as suitable for glazing automotive vehicles, with restrictions on where they are used. Laminated safety glass, wire glass, heat-treated glass, rigid plastics, and flexible plastics all have their special uses.

The markings on windows and windshields will be more complicated in the future. In addition to the manufacturer's trademark, the etching will show the words "American Standard" or the letters "AS" followed by a number or numbers. These indicate that the material used meets tests qualifying it for that particular position in the car. "AS1," for example, will appear on the windshield. At the present time, only certain types of laminated glass meet the tests for luminosity transmittance, abrasion resistance, light stability, impact resistance, optical deviation, and visibility distortion required for windshields. The committee explains, however, that it has developed performance requirements



which leave the field open for any material that meets the tests to qualify for acceptance.

Research has shown that the plastics now available become badly marred over a relatively short period of time; therefore, they are not permitted for use in windshields, or in other places where visibility is a vital factor for safety. They can be used, however, in rear windows of convertibles, for example, or windscreens, for motorcyles.

Other 1950 provisions maintain high visibility through the windshields and other levels where it is important for the driver to see clearly, but permit less light transmittance through the glazing in other areas. Special materials that cut down the ultraviolet and infrared rays can now be used in standee windows in buses and in some sections of the modern curved windshields and back windows of automobiles. A special mark will indicate which part of the material has met the more stringent requirements qualifying it for visibility. This should add materially to car passengers' comfort as well as aiding in air conditioning buses because manufacturers can now eliminate some of the heat and light glare by means of these special glazing units.

Bus passengers may look forward to greater comfort, too, because of the new provisions for multiple glazed units, which help in air conditioning by helping to insulate the bus and reducing the amount of heat transfer through the windows.

Flying Glass Hazards

The use of safety glass for the protection of automobile passengers has had a relatively short history. In the 1920's, motor car manufacturers used plate glass for glazing the newly popular closed car models. Ordinary glass flies into jagged splinters when broken. Showers of such fragments are dangerous.

A survey made in about 1926 showed that 45 percent of all motorists injured in automobile accidents

were cut by broken, flying glass.

About 1927, laminated safety glass was offered by one automobile manufacturer as optional equipment for windshields. Within a few years, it became standard equipment on all automobiles. Production of safety glass on a commercial scale began in 1929.

By 1935 requirements and tests for approval of safety glass had been adopted by eight states. Many of these varied widely, to the confusion of automobile manufacturers, glass makers, state administrators, and users of automobiles. Legislation was pending in other states as well. It seemed imperative to all groups concerned that a uniform reference standard be set up for the guidance of manufacturers and administrators.

A committee was organized under the procedure of the American Standards Association, sponsored by the National Bureau of Casualty and Surety Underwriters (now the Association of Casualty and Surety Companies) and the National Bureau of Standards. This committee included representatives of automobile companies, glass manufacturers, state administrators, insurance companies, and safety experts. The standard was completed in 1938. A survey made soon after showed that 20 of the 32 states which at that time required the use of safety glass had adopted the American Standard specifications and tests.

The development of the American Standard "was one of the milestones in bringing the benefits of the tremendous investment in research and manufacturing techniques to the general public," one safety glass manufacturer estimates. The American Standard has stimulated manufacturers to seek better materials and to make a better product, this company declares.

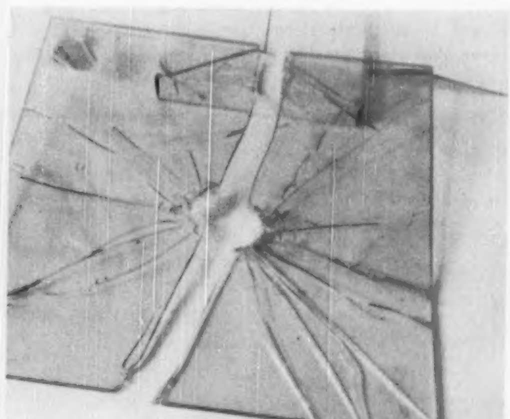
The 1938 edition of the American Standard included nine major tests, such as exposure to sunlight, humidity, boiling, impact (½-pound steel ball dropped 10 feet), fracture pattern, minimum strength on impact of large object (11-pound shot bag), impact of small, hard object (7-ounce dart), over-all strength (steel ball dropped 16 feet), and visibility distortion.

The newly revised standard recognizes the improvement which has occurred in safety glass by raising the test standards. For example, under the 1938 edition the ball test for determining the strength of safety glass required that the ball be dropped from a height of 16 feet. In the revised code this same test requires that the ball be dropped from a height of 30 feet.

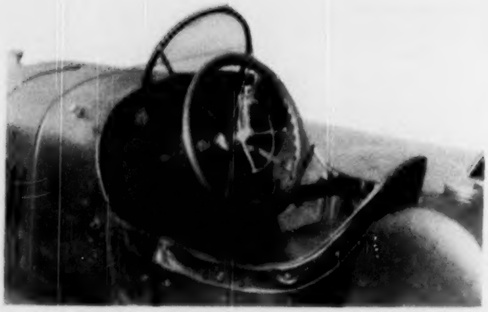
There are 24 tests in the new standard, covering such additional fields as abrasion resistance, resistance to chemicals used in cleaning, dimensional stability, flexibility, and flammability.

Among those who helped develop the 1950 edition are motor vehicle administrators, automobile and glass manufacturers, plastics manufacturers, trucking and transit associations, safety experts, organizations interested in the protection of eyesight, the Interstate Commerce Commission, and insurance companies.

Research by the National Bureau of Standards, and committee members was used.

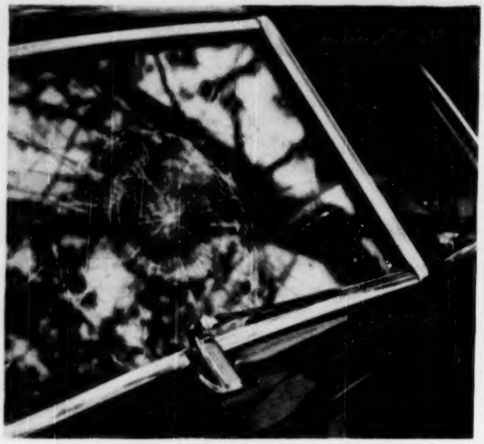


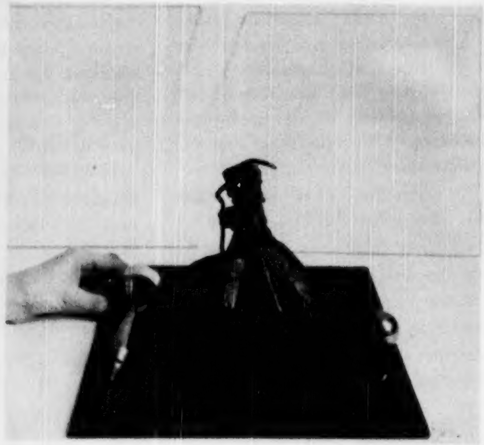
Along with the Jazz Age, the early '20's ushered in the first use of plate glass in those racy models that nipped along the roads at a formidable 25 mph. While this was a major advance over plain window glass and isinglass curtains, surveys soon showed that 45 percent of motorists injured in auto accidents were cut by flying glass. Ordinary plate glass (right) broke into jagged pieces. First attempts, in 1855, to make "unbreakable" glass by embedding wire in glass led to idea of using an interlayer of plastic. **(Continued on the next page)**



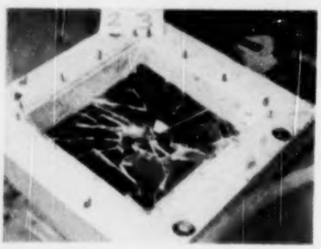
TESTING

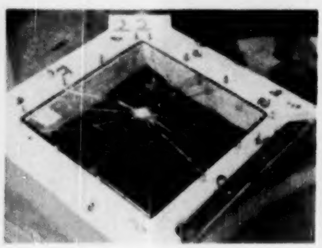
Tradition says Eduoard Benedictus, in 1903, dropped test tube; found cellulose nitrate held pieces of broken tube together. Research brought laminated safety glass in 1927. Pictured, at left, is an early attempt to provide a windshield.

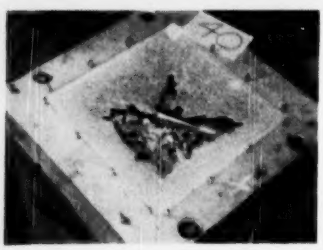




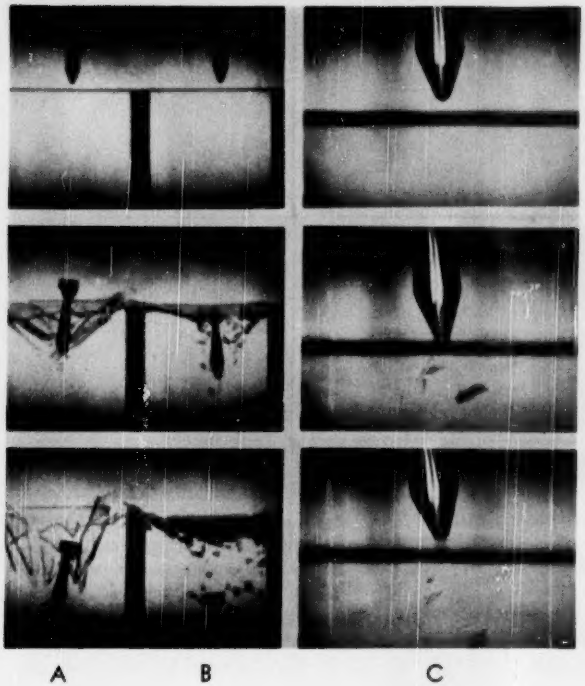
A lot is required of the modern windshield. It must "give" without breaking into pieces. Lamination of plastic between glass plates provides this "firm resiliency." American Standard specifications require testing with dart, shot bag, and steel ball dropped from various heights onto square sample pieces of the glazing materials.





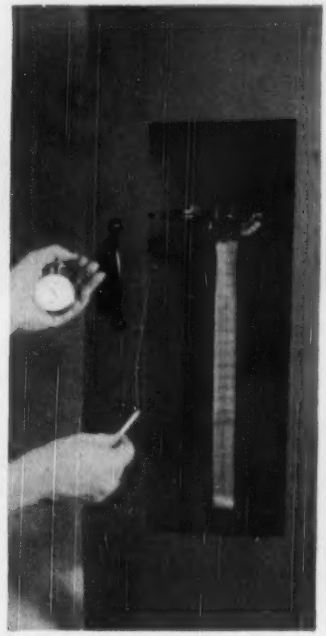


Where different types of glass and plastic glazing materials can be used in motor vehicles has been determined in part by impact tests on all glazing materials showing their fracture patterns. Ordinary plate glass, sample no. 23, breaks into major pieces; is not allowed for automobile glazing. Case-hardened (heat-treated to form a hard, outer surface) no. 40, is hard and brittle, but when broken by sharp object, disintegrates into a shower of tiny fragments. Laminated safety glass, no. 22, breaks but does not shatter due to bonding effect of the plastic ("punch-proof" resiliency of plastic interlayer is shown above). Plastic glazing, not shown, is tough but breaks into jagged pieces.



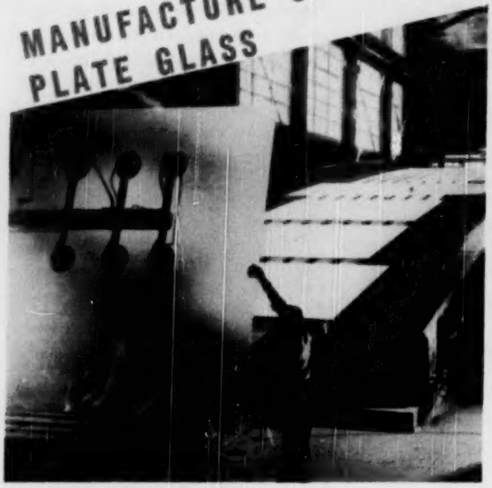
High-speed motion picture camera catches characteristic breakage of plate glass (A) and tempered glass (B). The dart actually bounces back from surface of laminated safety glass (C), cracking, but not shattering it. The 7-ounce steel darts were dropped simultaneously from height of 6 feet onto 12 X 12-inch flat specimens.

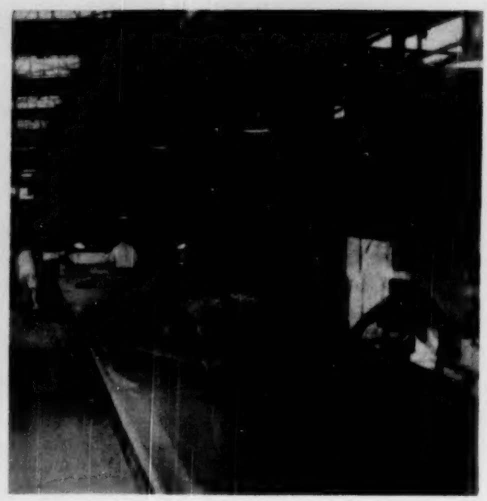
Flammability (rate of burning) is one of the tests required for plastic glazing materials. Others check resistance of plastics to chemicals used in washing car windows, abrasion, warpage, weathering, and dimensional stability.



Above, one reason why laminated safety glass meets American Standard requirements for windshields—even 16-lb bowling ball does not break through, but resilient plastic interlayer permits glass to "give" on impact. Despite heavy blow the glass did not separate from the unit. Discoloration, distortion, changes due to heat, and abrasion are some of the other glazing problems. Weathering test (left) submits sample to 200 hours of light at an average 145-degree temperature. (Continued on the next page)

MANUFACTURE OF PLATE GLASS



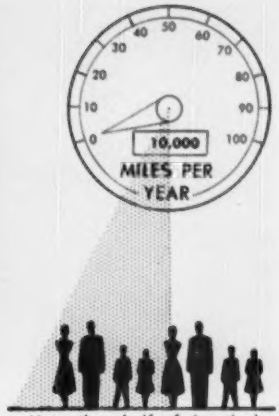


Huge sheets of plate glass ride down this "camel-back" preparatory to being cast in plaster (right). Before grinding and polishing, plaster is spread over both surfaces to obtain uniform flatness.

Grinding discs, shod with metal and with a sand and emery abrasive, grind plates to uniform thickness. Then, similar polishers, felt-covered and using a "rouge" of ferric oxide, give the plate its clear, polished finish.

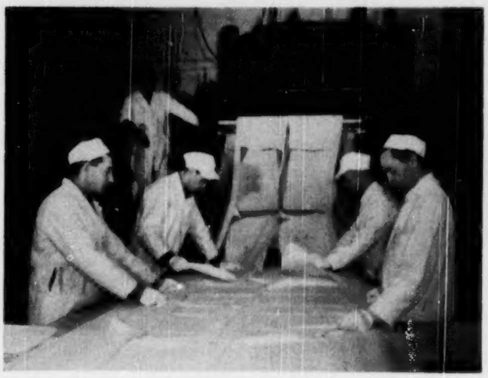
Emerging from the grinding and polishing lines, plates are bathed in muriatic acid and water, then conveyed to initial inspection. Experts go over every inch, and, using hieroglyphics known only to trade, mark any defects. The inspectors then section off glass for cutting.

Processed plate glass is cut to template sizes, and plastic interlayer is sample-tested with polarized light before safety glass lamination process is begun.

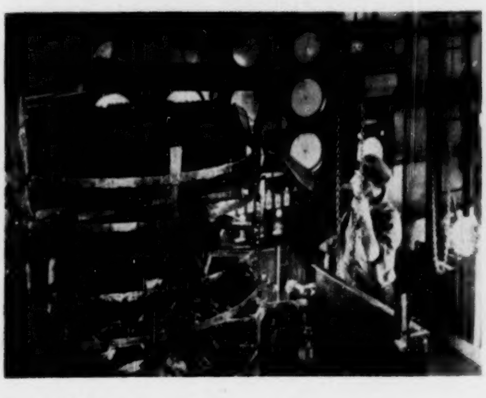


More than half of America's families have cars, which serve them for an average of 10,000 miles per year.

LAMINATION



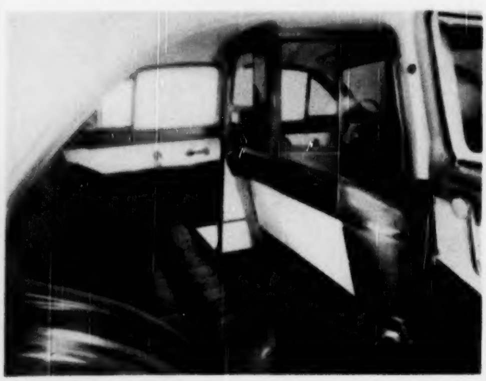
Plastic interlayer is cut to size and "sandwiched" between sheets of processed plate glass. These are then immersed in oil under pressure and permanently bonded in high temperature autoclave. Variously sized pieces of laminated safety glass are finally washed and readied for installation. (Continued on the next page)

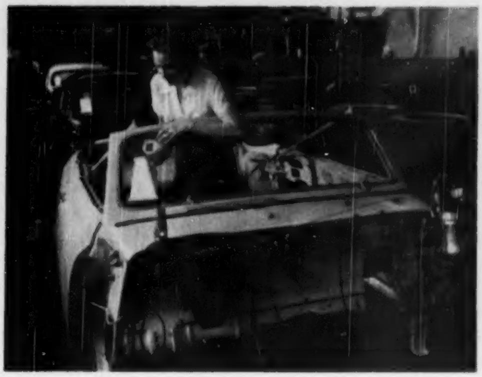


Both glass and plastics lend themselves to the curved windows designers have called for in modern cars. Plastic is especially flexible (left) in formative stage and is shaped by laying the heated, pliable panel over a mold. The formed shape is retained upon cooling. Present day plastics can be used in some locations when they meet impact, light transmittance, weathering, abrasion, discoloration, and flammability tests. American Standard requirements have been kept flexible as to application so as to permit new materials when they meet test specifications.

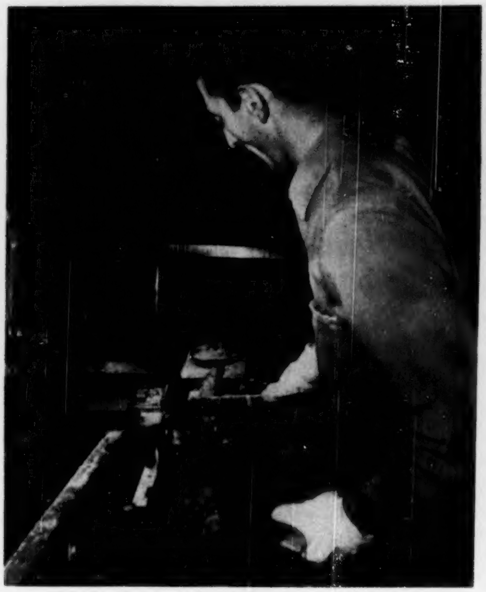
WHERE YOU'LL FIND SAFETY GLAZING MATERIALS

Passengers in this diesel bus may find standee windows made of plastic; multiple glazed units may protect them from heat or cold, and permit more efficient air conditioning. Wire glass can be used in the lower sections of folding doors in buses. Plastics meeting American Standard specifications can also be used for auxiliary swinging wind deflectors and rear windows in convertibles, and sliding partitions in taxi cabs. Plastic in rear window of convertible (below) did not break when car rolled over. Also, plastic rear window won't sag in canvas top.





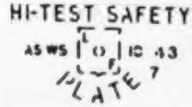
Currently, laminated glass is the only glazing material to meet American Standard requirements for windshields. Admissible placement of other safety glazing materials is detailed in a chart in the standard. The chart also lists which tests various glazing materials must pass to be in conformity with American Standards.

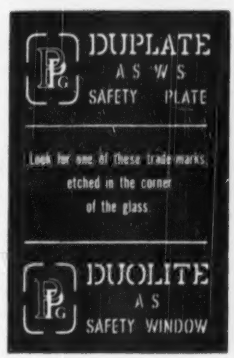


Manufacturer's data and American Standard markings are sand blasted (left) on pieces of glazing materials. Above, New Jersey state motor vehicle inspector checks rear window for conformity with state requirements, based on American Standards. Glazing labels shown below.

Copies of the American Standard Safety Code for Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways, Z26.1-1950, are available at $1.00 from the American Standards Association, Incorporated, 70 East 45th St., New York 17, N.Y.

"Plexiglas" label (above) meets 1950 standard; new dies are being made to replace old-style safety glass labels shown here.





NOTE: The Editors wish to express their thanks to the following organizations that extended their help and facilities in collecting information and photographs for this article: American Transit Assn; Assn of Casualty and Surety Cos; Bakelite Div, Union Carbide and Carbon Corp; E. I. DuPont de Nemours and Co; Electrical Testing Laboratories, Inc; Ford Motor Co; Libbey-Owens-Ford Glass Co; Monsanto Chemical Co; National Bureau of Standards; National Highway Users Conference; Pittsburgh Plate Glass Co; Rohm and Haas Co; State of New Jersey, Div of Motor Vehicles.

Brazil's Standard Weights and Measures Laws*

BRAZIL has been digging itself out from underneath a welter of confusion regarding standardized weights and measures since the beginning of the eighteenth century. At that time the rich South American country was a Portuguese colony and the first attempts to "standardize" units of measures came about when the old Portuguese weights and measures were introduced into Brazil by Royal orders. In October, 1812, shortly after France discovered and introduced the decimal metric system, the King of Portugal appointed a commission for "the examination of the bills and improvement of agriculture." The King approved the commission's report for a "Reform Plan" in 1814. One of the commission's recommendations was the adoption of the French metric decimal system to be instituted by merely changing the denomination of the old Portuguese measures. In 1816 two boxes containing "standard measures" arrived in Rio de Janeiro from Portugal.

Confusion and lack of uniformity persisted in Brazil for many more years, even after it became an independent Kingdom in 1822. A new commission was created in 1833 charged with studying a new plan for improvement of the system of weights and measures. The result was that by the end of 1835 a fundamental unit of measure was decreed, named "Vara" and measuring about 110 cm.

Adopt Metric System

A quarter of a century later the metric decimal system was adopted in Brazil in its entirety. The prototype standards of metric weights and measures were brought from Europe around 1860, but the actual conversion did not take place until the late thirties of the present century. Brazil was actually one of the founders of the International Meter Convention in 1875; in 1921 it ratified this work but soon afterwards withdrew, losing the right to receive the new types of standards distributed to the countries which supported the Convention.

In the course of the last twenty years several bills were presented to the Brazilian Congress with a view of final introduction of a uniform metric decimal system of measures, but it was only in August, 1938, that a law was adopted defining one legal system of units of measures. The law called for the establishment of

bureaus for calibration of commercial instruments of measurement, provided for supervision and enforcement, and fixed penalties for all violations of the law. The same legal act created the Metrological Commission which is a technical consultative, intrepretative, and deliberative body. It is composed of representatives of metrological bodies, scientists, members of technological institutions and representatives of ministries of labor, industry, and commerce. The Metrological Commission formulates national metrological regulations which, if approved, become obligatory.

For practical purposes Brazil has three kinds of physical legal standards of measures; (1) national or primary standards kept at the National Institute of Technology and checked against international prototypes; (2) secondary standards kept by the States Metrological Department and checked against the National Standards; (3) tertiary standards deposited with municipal metrological departments and checked against the secondary standards.

The law prescribes that all commercial measuring devices (scales, meters, etc) must be tested and approved by a government office designated for this purpose before being used publicly. About once a year these devices are rechecked, and any showing a deviation greater than permissible tolerance are destroyed.

The law takes cognizance of the difficulty of finding necessary personnel for introduction and supervision of the new system. To speed the program a decree of May 1949 provides for immediate creation of special courses in metrology of varying degrees of preparation in order to train technical personnel capable of coping with this intricate problem which has been in solution for the past 138 years.

*Excerpted from two booklets received from the Technological Research Institute of Sao Paulo, Brazil: (1) Metrological Legislation and (2) Rules and Regulations Pertaining to Measurements, Measures, and Commercial Measuring Instruments.

—From "Bell System Participation in the Work of the ASA" by Harold S. Osborne. Bell Telephone Magazine, No. 4. Winter 1949-50.

AMERICAN STANDARDS have an important influence on the manufacturing branch of the Bell System—even to the selection of the raw materials which go into the production of telephone apparatus. One illustration is found in such a commonplace item as sheet metal supplies. Vast quantities of telephone equipment, including such things as relay components, apparatus panels and covers, switchboard parts, and pole-line hardware, are made from stampings of steel, aluminum alloys, and other metals. The standardization of thicknesses for these metal supplies has resulted in important economies not only in the purchase of strip and sheet metal stocks but also in the manufacturing design of apparatus and in processing machinery. In addition, the recent American Standard on Surface Roughness fills a long-felt need for a widely accepted scale of roughness which facilitates the purchase of metal stocks having surface finishes suitable for the various types of telephone apparatus.

Standards From Other Countries

MEMBERS of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. The titles of the standards are given here in English, but the documents themselves are in the language of the country from which they were received.

For the convenience of our readers, the standards are listed under their general UDC classifications.

001/016 Bibliography

Spain

Editor's Bibliographical Index Card Forms, UNE 1001

003.62 Symbols

France

Symbols Used in Thermodynamics, NF X02-104

Symbols Used in Mechanics of Fluids, NF X02-105

532.57 Hydrometry

France

Instantaneous Fluid Flow Measurements, NF X10-101

621.2 Engineering. Fixed and Movable Parts

Poland

Various Types of Axles PN M-83001 through 83003; 83005; 83009

621.3 Electrical Engineering

Finland

Two-Pin Holders for Fluorescent Lamp, SFS C.XI.29

Two-Pin Fluorescent Lamp, SFS C.XI.71

France

Base-and-Anchor-Plates for Railroad Telecommunication Overhead Lines, NF F56-001

Protective End-Bushings for Armored Electric Cables Used in Marine Constructions, NF J11-120

Various Shunts for Measuring Instruments, NF C10 013-1 through C10 013-3

Mica Cones for Insulating Commutator Segments, NF C10 007

Germany

Conventional Representation of Switch Contacts in Telegraph and Telephone Installations, DIN 41020

Reversible Switch for Telegraph and Telephone Installations, DIN 41030

High Frequency Interference from Electric Machine and Apparatus Under 500 w, DIN 57875

Specifications for Disturbance Voltage Measuring Instruments and Methods of Measurement, DIN 57876; 57877

The Netherlands

Power Stations: Glossary Concerning Statistical Terms, N 923

Poland

Installation Apparatus for Voltages up to 500 v Testing Fuses, PN E-40; 40.1

Connection of Test Instruments to an a.c. Power Line, PN E-104

Rumania

Electrical Installation Material, STAS 234 through 239; 241; 242

Ferrules and Brackets for Overhead Lines, STAS 288; 382

Various Types of Ferrules for Overhead Lines, STAS 413; 416; 417

Rubber Insulated Wire for Voltage up to 750 v, STAS 526

Rectangular and Round Copper Wire, Paper Insulated, for Coil Windings, STAS 541

Round Copper Wire, Silk Insulated, STAS 543

Three-Phase Asynchronous Motors, STAS 625

Sweden

Transformers for Local Power Lines, SEN 04-01

Bare Hard Copper Wires and Cables for Overhead Power Transmission Lines, SEN 10-1949 (Revised)

Mercury-Arc Converters, SEN 28-1941E

Lead-Covered, Paper-Insulated Cable for Voltages Over 600 v, SEN 37-1949

Testing of Domestic Heating Appliances, SEN 41-1948

United Kingdom

Ceramic Materials for Telecommunication and Allied Purposes, BS 1598-1949

Steel Tubular Traction Poles, BS 8-1950

Two-Pole and Earthing-Pin, Plugs, Socket-Outlets and Socket-Outlet Adaptors, BS 546-1950

Cotton Selvedge Tapes and Webbing for Electrical Purposes, BS 633-1950

621.6 Apparatus For Conveyance And Storage Of Gases And Liquids. Conduits And Pumps

Germany

Cast Iron Flanges, DIN 2530-2535

Cast Steel Flanges, DIN 2543-2551

Welding Neck Flanges, DIN 2628; 2629; 2636-2638

Packing Gaskets and Rings for Flanges, DIN 2690-2694

Poland

Pipe Flanges, PN H-74307/8

Welded Steel Sheet Air Ducts, PN G-43001; 43004; 43006; 43021 through 43-23; 43027

Sweden

Various Types of Union Couplings and Elbows, SMS 1096-1100

Gas Cocks and Fittings, SMS 1120-1124

United Kingdom

Cast Iron Pipe Fittings for Sprinklers and Other Fire Protection Liquids, BS 1641-1950

Dimensions for Stoneware Pipes and Pipe Fittings for Chemical Purposes, BS 1634-1950

Steel Pipe Flanges and Flanged Fittings for the Petroleum Industry, BS 1560-1949

621.7 Workshop Practice

France

Flasks for Mechanical and Hand Moulding, NF A73-501; 502; 529

Crucibles, Different Types of, NF A73-521 through 526

Color Code for Pattern Making, NF A73-527

Pattern Making. Various "Drafts", NF A73-528

Core Box Joint Pins, NF A73-530; 531

Rumania

Standard Radii for Roundings, STAS 406

Sweden

Standard Color Card, CIS 90 00 01

Colors Used for Models and Wooden Core Boxes, SMS 930

621.753 Tolerances. Fittings. Gages

Belgium

ISA Tolerance System. Fundamental Deviations of Shafts and for Holes, NBN 102

ISA Tolerance System. Recommended Fits, NBN 103

ISA Tolerance System. Limit Gages, NBN 104

ISA Tolerance System. Deviation of Limit Gages for Shafts, NBN 105

United Kingdom

Slip (or Block) Gages and Their Accessories, BS 888-1950

621.791 Soldering. Welding. Cutting

Austria

Bending Test of Welded Joint, ÖNORM M3052

Belgium

Code of Good Practice for Welded Steel Constructions. Section IV, Part 2: General Recommendations Relative to the Execution of Work, NBN 207

Denmark

Fusion Welding of Steel: Regulations for Process and Control, DS 316, 2nd edition

Form of Certificate for Ordinary Working Tests, DS 316, Supplement A

621.798 Packing and Dispatch Equipment

Finland

Containers for Paint and Varnish, Capacity from 1/16 to 10 Liters, SFS Z.11.21

Tin Cans for Paint and Varnishes, Square Capacity from 1 to 20 Liters, SFS Z.11.22

Buckets for Paint and Varnish, 20 l. Capacity, SFS Z.11.23

India

Code for Seaworthy Packaging of Woolen Textiles, IS:32

621.8 Machine Parts. Hoisting And Conveying Machinery. Power Transmission. Means of Attachment. Lubrication

Belgium

Systems of Screw Threads, NBM 109 through 115

Germany

Overhead Bracket Transmission Bearing, DIN 119

Poland

V-Belts, DIN 2215, Bl.2

Nuts, Hexagonal, Low, PN M-82153; 82154

Self-Tapping Sheet Metal Screws, PN M-83101
Stop Rings, PN M-85101; 85103; 85104
Various Hand Tools, Such as Pliers, Spanners, Screwdrivers, etc., PN M-63810; 63811; 64412; 64456; 64470; 64951; 64954; 64948; 65044

Rumania

Keys, Classification of, STAS 430

Sweden

Bearing Covers, Dimensions, SMS 1381
V-Belts and V-Belts Pulleys, Dimensions, SMS 980; 981
Spacers, Longitudinally Corrugated, Type CT, SMS 691
Keying. Chamfers of Key Edges and Keyways for Heavy and Fluctuating Stresses, SMS 696
Slotted Head Screws, Metric, Whitworth, (Revised), SMS 18-21; 25; 26
Square Head Screws and Nuts Metric and Whitworth, Washers, Set Screws, (Revised), SMS 51; 58; 59; 62; 70; 74; 79
Various Types Machine Screws With Metric and Whitworth Thread, SMS 1371-1376
Basic Standards for Screwed Joints, SMS 1403
Various Types of Slotted-Head, Hexagon Head Screws and Nuts, Metric and Whitworth Threads SMS 1411-1432
Various Types of Rivets, SMS 1440-1443
Heavy Hexagon Nuts, Washers, Expanding Bolts, SMS 1464-1468

United Kingdom

Wrought Iron and Mild Steel Hooks, BS 482-1950
Dimensions of Ball Bearings and Parallel-Roller Bearings, BS 292-1950

621.9 Machine Tool. Tools. Operations, In Particular For Metal And Wood

Finland

Frame Saw Blades, SFS 0.1.31
Mounting Jaws for Blades, SFS 0.1.32

The Netherlands

Milling Cutters, Various Forms, Nomenclature, N 830/1
Lathe Tools. Dimensions of Shaft Cross-Sections, N 827

Poland

Slotting End-Mills, PN M-57437
Hand-Vise, PN M-60921
Work Holders. Blocks, PN M-61054; 61204; 61291
Bent-Nose Pliers, PN M-64413
Screw-End Axles, PN M-83007
Stop Rings, PN M-85102
Morse Cone Sockets, Tee-Slots, PN M-55084; 55090
Machine Tools for Metal, Principal Dimensions, PN M-55314; 55323; 55325; 55326
Metal Handles and Handwheels, PN M-56150; 56157
Two-Man Cross-Cut Saws, PN M-54217
Side Milling Cutter, PN M-57471
Drill Chucks, Pins, Legs for Work Holders, etc, PN M-60201; 60204; 61206

Rumania

Cutting Tools for Planer, etc. STAS 350
Twist Drills, Classification, STAS 572
Saws for Metal, STAS 639

Sweden

Blades for Bow-Saws, SMS 1445
Die Holders, Punch Holders, etc, for Mechanical Presses, SMS 850; 880-884

622 Mining

Germany

Various Types of Mining, Conveyors, DIN 22203; 22205; 22208; 22211
Miner's Spades, DIN 20127
Bucket Conveyor, DIN 22201;22213
Apron Conveyor, DIN 22204
Hopper Conveyor, DIN 22207
Parts of Link-Type Conveyors, DIN 22210

Rumania

Drill and Drill-Pipe Lifters, and Various Tools for Handling Pipes, Drills, etc. STAS 208 through 211; 213; 215
Mining Pick, Shovel, Two-Hand Cross Saw, Coal Fork, STAS 244 through 247; 308; 316
Pulley Blocks and Drums Used in Mining, STAS 326; 327

624 Civil Engineering

Poland

Steel Structures, Specifications, Calculations, Designing, PN B-190; 191; 193; 199

Spain

Determination of Specific Gravity of Soil, UNE 7001

Sweden

Passenger Elevators for 3-4 Persons in Closed Shafts, SIS 60 00 10

631.3 Agricultural Tools and Machinery

Belgium

Threshers, NBN 214-1949

Germany

Silos, DIN 11621

Rumania

Hoes, Different Types, STAS 269

Sweden

Hand Tools Such as Manure Fork, Spading Fork, Pitchfork, Garden Rake, Edge Trimmer, Beet-Topping Knife, SMS 1446-1450; 1453; 1457

648 Laundry Work. Cleaning

Germany

Laundry Work, Mangling Machines, DIN 4822; 4823

651 Office Organization. Office Management

Finland

Folders and Files for Punched and not Punched Papers SFS Z.VIII.1/2

Poland

Various Forms of Hospital Registration Cards, PN Z-09002; 09003; 09004; 09044

Rumania

Office Side Chairs and Arm Chairs, STAS 150; 151

Spain

Various Sizes of Labels, UNE 1023
Duplicate Pads and Books, UNE 1024

Sweden

Writing and Drawing Forms, SIS 73 25 02
Forms of Drawn Bills, SIS 73 28 21

66 Chemical Products

Poland

Sodium Orthophosphate, PN C-84019
Naphtalene, Industrial, PN C-97004
2-Amino-Phenol, PN C-97006

United Kingdom

Isopropyl Alcohol (Isopropanol), BS 1595-1950
Diacetin (Glyceryl Diacetate), BS 1594-1950
Perchlorethylene, BS 1593-1950
Ethyl Lactate, BS 663-1950
Carbon Disulphide, BS 662-1950
Trichlorethylene (Types A, B, and C), BS 580-1950
Acetic Acid, BS 576-1950
Carbon Tetrachloride, BS 575-1950
Diethyl Phthalate, BS 574-1950
Dibutyl Phthalate, BS 573-1950
Ethyl Acetate, BS 553-1950
Amyl Acetate, BS 552-1950
Normal Butyl Acetate, BS 551-1950
Ethyl Alcohol (Ethanol), BS 507-1950
Diacetone Alcohol, BS 549-1950
Acetone, BS 509-1950
Normal Butyl Alcohol (Butanol), BS 508-1950
Methyl Alcohol (Methanol), BS 506-1950

666 Glass and Ceramic Industry. Artificial Stone

Finland

Glass Threads, Nominal Sizes and Tolerances, SFS R.1.1/2
Threaded Tops of Glass Containers Types A, B, C, D, SFS R.1/31/32

France

Various Hydraulic Binders Such as Portland Cement, Iron Cement, Blast Furnace Cement, etc, NF P 15-302 through 307; P 15-310; 15-311

Rumania

Refractory Products, Clay, Kaolin, STAS 125; 229 through 232
Glass, Chemical Analysis, STAS 318
Quartz, Dolomites, etc, for Ceramic Industry, STAS 264; 265; 266; 268

Sweden

Nursing Bottle (Revised), CBS 166
Bottle With Dropper (Revised), CBS 169
Glass Jars With Glass or Metal Lids, CSB 253

Switzerland

Glass Bottle Necks. Dimensions, SNV 79100

681.2 Instrument Making. Instrumentology

Germany

Table and Stand for Measuring Instruments, DIN 223
Various Designs of Scale Knives, Axles and Supports, DIN 1921

The Netherlands

Dimensions and Tolerances of Weights Used for Analytical Purposes, N 1299

683 Hardware. Ironmongery. Lamps and Stoves

Finland

Screw Lids for Glass Containers, SFS R.1.33

France

Large Gate Hinges, NF P 26-418

Standards Received From Canada

Galvanized steel wire strand, B12-1950
Seamless copper and brass pipes, HC64-1950
Seamless copper water tubes and drainage tubes, HC66-1950

What's New on American Standard Projects

VENTILATION OF OPEN TANKS

Abstract of report by Arthur C. Stern, Chief, Engineering Unit, Division of Industrial Hygiene and Safety Standards, New York State Department of Labor, at the Annual Meeting of the American Industrial Hygiene Association held in Chicago, April 22 to 29. Mr Stern is chairman of Sectional Committee Z9's subcommittee on Operations.

Under the joint sponsorship of the American Industrial Hygiene Association, the American Society of Heating and Ventilating Engineers, and the National Association of Fan Manufacturers, the American Standards Association Sectional Committee on Safety Code for Exhaust Systems, Z9, has prepared a *proposed* American Standard Code for Ventilation and Safe Operation of Open Surface Tanks.

Open Surface Tanks include electroplating, pickling, dyeing, tanning, degreasing, and similar tanks. The proposed standard groups these tank operations into 12 classes depending upon the severity of the hazard associated with the substance contained in the tank because of the toxic or explosive nature of the vapor, gas, or mist produced, and upon the capacity of the tank to produce such vapor, gas, or mist as well as the relative energy with which it is projected or carried upwards from the tank. Tables are provided to assist in proper classification of operations.

Various hood types are illustrated and details of their design shown. For each hood type and class of operation the minimum air velocity required to control vapor, gas, or mist and the method for calculating the minimum air quantity required are both stipulated. A method for calculating the size of slot or baffle opening needed to provide uniform air flow into a manifold is described.

Magnet Wire, C9—

Sponsor: National Electrical Manufacturers Association

K. M. MacKay, Acme Wire Company, representing the NEMA Magnet Wire Section, is chairman of this newly organized committee, with C. A. Bailey, General Electric Company, as secretary. Both represent the NEMA Magnet Wire Section. The scope approved for the committee covers: "Standards for magnet wire, including definitions, type designations, dimensions, construction, performance and methods of test, of all shapes and sizes of insulated copper conductors generally used in the winding of coils for electrical equipment."

Organizations represented on the committee include the American Institute of Electrical Engineers, American Society for Testing Materials, Armed Services Electro Standards Agency, Electric Tool Institute, International Business Machine Corporation, National Industrial Service Association, NEMA Magnet Wire Section, NEMA Motor and Generator Section, NEMA Transformer Section, NEMA Renewal Parts Section, Producers Group (wire manufacturers not affiliated with NEMA), Radio Manufacturers Association, and the Telephone Group.

Electrical Equipment in Coal Mines, M2—

Sponsors: American Mining Congress; U. S. Bureau of Mines

Recommended changes in the proposed safety code for installing and using electrical equipment in coal mines, were considered at a meeting of the sectional committee May 3. The standard is now to be sent to letter ballot of the committee. The proposed code is designed to minimize hazards to life and property, and indicate steps necessary in the selection, installation, operation, inspection, and maintenance of electric equipment and circuits in and about coal mines.

Electric Lamps, C78—

Sponsor: Electrical Standards Committee

Subcommittee 2 on electric discharge lamps, at a meeting May 3, agreed to submit a number of standards to the sectional committee. Most of these standards have been in circulation as proposed American Standards for a year's trial and study. The subcommittee decided at this meeting that its work is to be concentrated on those lamps that are generally purchased by the ultimate consumer.

Electric Lamp Bases and Holders, C81—

Sponsor: Electrical Standards Committee

The scope of this committee has now been approved as: "Standards of dimension and form of corresponding bases and holders for incandescent lamps, electric discharge lamps and starters for electric discharge lamps to provide engagement and interchangeability."

Toxic Dusts and Gases, Z37—

Draft standards on allowable concentrations for cyclohexane, cyclohexanol, cyclohexanone, methylcyclohexane, methylcyclohexanol, methylcyclohexanone, nitroethane, and 2-nitropropane are being considered by the sectional committee. The purpose of these proposed standards is to define, as nearly as available information will permit, a safe upper limit for the concentration of these substances in the atmosphere of workrooms. They are for the guidance of industry in establishing control procedures for the protection of the health of workers.

Construction and Maintenance of Ladders and Stairs for Mines, M12—

Sponsor: American Mining Congress

A canvass is to be made this summer of the sectional committee to determine whether the 1946 edition of the standard on mine ladders should be reaffirmed or whether it should be revised.

Safety Code for Coal Mine Transportation, M15—

A subcommittee to review the 1931 edition of this code and make recommendations that may lead to a revision has been appointed by the Executive Committee of the Mining Standardization Correlating Committee. E. R. Maize, Director, Safety Division, National Coal Association, is chairman; Members of the subcommittee are: C. L. Brown, Safety and Coal Mine Inspection Division, U. S. Bureau of Mines; M. H. Forester, Vice-President, Pittsburgh Consolidation Coal Company, representing the National Coal Association; J. V. McKenna, State Mine Inspector, Waynesburg, Penn, representing the Pennsylvania Department of Mines.

Safety Provisions for Electrical Installations for Open-Pit and Strip Mining Operations—

To supplement work under way in the sectional committees on safety provisions for electrical installations in coal mines, metal mines, and quarries, the Mining Standardization Correlating Committee has authorized a study group to consider the desirability of safety provisions for similar installations in open-pit and strip mining operations. The first step in this study will be a preliminary survey by D. Stoetzel of the General Electric Company.

• • A new series of technical radio broadcast services was started by the National Bureau of Standards January 1 over radio stations WWV, Beltsville, Maryland, and WWVH, Maue, Territory of Hawaii. The revised services include standard radio frequencies of 2.5, 5, 10, 15, 20, 25, 30, and 35 megacycles (the Hawaiian station broadcasts on an experimental basis on 5, 10, and 15 megacycles); time announcements at 5-minute intervals by voice and International Morse Code; standard time intervals of 1 second, and 1, 4, and 5 seconds; standard audio frequencies of 440 cycles (the American Standard musical pitch A above middle C) and 600 cycles; radio propagation disturbance warnings by International Morse code. Reception reports indicate that WWVH is received at many locations not served by WWV.

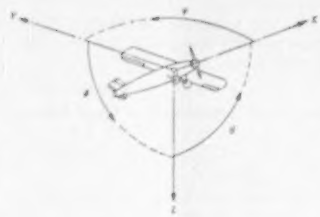
Up-to-date Aero Symbol Standard Published

TO end confusion in the preparation and presentation of technical papers and texts in the aeronautical sciences, a new American Standard Letter Symbols for Aeronautical Sciences has been issued. It recommends standard letter symbols for 400 primary and secondary concepts, many of which are in agreement with American Standards for other phases of science and engineering. The new standard brings up to date an American Standard adopted in 1930 but for some years obsolete.

The National Advisory Committee on Aeronautics and the Institute of Aeronautical Sciences collaborated with five major engineering organizations* in sponsoring this phase of a general program of standardization for letter symbols and abbreviations. Work was started in 1947 by a special committee with Professor Thomas F. Ball, Applied Physics Laboratory, The Johns Hopkins University, as chairman. His committee is one of 15 subcommittees of Sectional Committee Z10 which represents 36 national societies and associations.

Copies of American Standard Letter Symbols for Aeronautical Sciences, Z10.7-1950, may be obtained from the American Standards Association at $1.25 each.

The new standard consists of a table of symbols arranged in alphabetical order and two tables of subscripts and superscripts representing secondary concepts. Also included in the first table for convenience in using the standard are the dimensional characteristics of the various concepts in terms of mass, length, time, and temperature; indications



of agreement with other current American Standards; and helpful remarks and definitions. A table arranged alphabetically by concepts is also included.

Letter symbols for special concepts in meteorology and servomechanisms are not included in this standard but are under development by other special committees.

In general, the letter symbols have been selected with consideration of the fact that typewriters are commonly used in some stage in the duplication or reproduction of manuscripts. For this reason variations such as the use of bold face type have not been used to distinguish letter symbols, thus simplifying preparation of typewritten manuscripts. However, italic type is generally recommended for printed text. This is indicated for printers by underlining each symbol in typewritten manuscripts.

"The publication of this standard is a significant indication of the unity which may be achieved in a complex field of applied science in arriving at a common method of shorthand notation which employs a system of symbols understandable to all who have occasion to consult the literature of the field," said Dr Hugh L. Dryden, Director of the National Advisory Committee for Aeronautics, recently.

Important as "Shorthand"

The complexity of the general field of aeronautics makes this standard "shorthand" particularly important. As explained by Dr Dryden and his assistant, Dr James A. Hootman:

"Workers in the field are drawn from all of the various branches of the applied physical sciences. Even the biological sciences are being called upon to aid in the solution of certain of the specialized problems of flight in which the characteristics of the human anatomy impose limitations beyond which improvements in the mechanical performance of the aircraft are of no avail. It is extremely important in a field of such complexity that a common language be employed, which is intelligible to all. To achieve the adoption and maintenance of such a common language it is inevitable that some compromises will be found necessary. It is remarkable that so few will be required by those who follow the present standard . . ."

* American Society of Civil Engineers; American Institute of Electrical Engineers; American Society for Engineering Education; American Society of Mechanical Engineers; American Association for the Advancement of Science.

Gas Mask

(*Continued from page* 139)

As explained in the standard itself, it is the responsibility of those who issue or use gas masks to see that the proper canister is used, and that the color and markings are properly maintained until the canister has served its purpose.

The manufacturers of gas-mask canisters took part in preparation of the new edition of the American Standard. In addition, insurance and safety organizations, the American Petroleum Institute, the American Society of Mechanical Engineers, governmental labor officials, and the Bureau of Mines cooperated in completing this new edition. The National Safety Council again assumed the leadership as sponsor. R. G. Benson, of the Council, served as secretary for the committee.

Recognizing that questions may arise from time to time as gas-mask canisters may be developed for other gases or combinations, the committee has made arrangements for additional color assignments. Requests for the assignment of colors to canisters not covered in this edition of the standard should be sent to ASA Sectional Committee K13 on Identification of Gas-Mask Canisters either through the National Safety Council as sponsor, or through the American Standards Association.

AMERICAN STANDARDS

Status as of May 12, 1950

Legend

Standards Council—Approval by Standards Council is final approval as American Standard; usually requires 4 weeks

Board of Review—Acts for Standards Council, gives final approval as American Standard; usually requires 2 weeks

Correlating Committees—Approve standards to send to Standards Council or Board of Review for final action; approval by correlating committee usually takes 4 weeks

Building

American Standards Just Published—

Copper Water Tube (ASTM B88-49; ASA H23.1-1949) $.25

Copper Pipe, Standard Sizes (ASTM B42-49; ASA H26.1-1949) $.25

Red Brass Pipe, Standard Sizes (ASTM B43-49; ASA H27.1-1949) $.25

Rolled Copper-Alloy Bearing and Expansion Plates and Sheets for Bridge and Other Structural Uses (ASTM B100-49; ASA H31.1-1949) $.25

Sponsor: American Society for Testing Materials

Places of Outdoor Assembly, Grandstands and Tents, Z20.3-1950 (Revision of Z20.1-1941 and Z20.2-1949) $.25

Sponsors: Building Officials Conference of America; National Fire Protection Association

American Standards Approved—

Specifications for Portland Cement (ASTM C 150-49; ASA A1.1-1950)

Specifications for Air-Entraining Portland Cement (ASTM C 175-48T; ASA A1.16-1950)

Specifications for Masonry Cement (ASTM C 91-49; ASA A1.3-1950) (Revision of ASA A1.3-1948)

Methods of Test for Compressive Strength of Hydraulic Cement Mortars (ASTM C 109.49; ASA A1.4-1950) (Revision of ASA A1.4-1948)

Methods of Chemical Analysis of Portland Cement (ASTM C 114-48T; ASA A1.6-1950) (Revision of ASA A1.6-1948)

Methods of Test for Autoclave Expansion of Portland Cement (ASTM C 151-49; ASA A1.8-1950) (Revision of ASA A1.8-1948)

Methods of Test for Air Content of Portland Cement Mortar (ASTM C 185-49T; ASA A1.9-1950) (Revision of ASA A1.9-1948)

Methods of Test for Heat of Hydration of Portland Cement (ASTM C 186-49; ASA A1.10-1950) (Revision of ASA A1.10-1948)

Method of Test for Normal Consistency of Hydraulic Cement (ASTM C 187-49; ASA A1.11-1950) (Revision of ASA A1.11-1948)

Method of Test for Soundness of Hydraulic Cement Over Boiling Water (Bat Test) ASTM C 189-49; ASA A1.13-1950 (Revision of ASA A1.13-1948)

Method of Test for Tensile Strength of Hydraulic Cement Mortars (ASTM C 190-49; ASA A1.14-1950) (Revision of ASA A1.14-1948)

Method of Test for Time of Setting of Hydraulic Cement by the Vicat or Gillmore Needles (ASTM C 191-49; ASA A1.15-1950) (Revision of ASA A1.15-1948)

Sponsor: American Society for Testing Materials

American Standards Reaffirmed—

Method of Sampling Hydraulic Cement (ASTM C 183-46; ASA A1.2-1948, R 1950)

Method of Chemical Analysis of Portland Cement (ASTM C 114-47; ASA A1.5-1948, R 1950)

Method of Test for Fineness of Portland Cement by the Turbidimeter (ASTM C 115-42; ASA A1.7-1948, R 1950)

Method of Test for Specific Gravity of Hydraulic Cement (ASTM C 188-44; ASA A1.12-1948, R 1950)

Requested by: American Society for Testing Materials

Consumer

American Standards Approved—

Specifications and Test Procedure for Household Electric Ranges, C71.1-1950

Sponsor: National Electrical Manufacturers Association

Drawing Room Practice

American Standards Just Published—

Graphical Symbols for Railroad Equipment, Z32.2.5-1950 $.75

Graphical Symbols for Heat-Power Apparatus, Z32.2.6-1950 $.35

Sponsors: American Society of Mechanical Engineers; American Institute of Electrical Engineers

Electrical

American Standards Just Published—

Relays Associated With Electric Power Apparatus, C37.1-1950 (Revision of C37.1-1937) $.60

Sponsor: Electrical Standards Committee

Specifications for Laboratory Standard Pressure Microphones, Z24.8-1950 $.50

Method for the Pressure Calibration of Laboratory Standard Pressure Microphones, Z24.4-1950 $.75

Method for the Coupler Calibration of Earphones, Z24.9-1950 $.75

Sponsor: Acoustical Society of America

American Standards Approved—

Designation System for Metal Electron Tube Shells, RMA Std ET-112, NEMA Pub. No. 508, ASA C60.4-1950

Sponsor: Joint Electron Tube Engineering Council

In Board of Review—

Specifications for Rigid Steel Conduit, Zinc Coated, C80.1

Specifications for Rigid Steel Conduit, Enameled, C80.2

Specifications for Electric Metallic Tubing, Zinc Coated, C80.3

Sponsors: National Electrical Manufacturers Association; American Iron and Steel Institute

In Correlating Committee—

Standard on Designations for Electrical, Electronic, and Mechanical Parts and Their Symbols, Z32 (49 IRE 21.S1)

Sponsor: Institute of Radio Engineers

Industrial Control-Standards for Device Designations, Z32

Sponsor: National Electrical Manufacturers Association

Mechanical

American Standards Just Published—

Wrought Steel and Wrought Iron Pipe, B36.10-1950 (Revision of B36.10-1930) $.65

Sponsors: American Society of Mechanical Engineers; American Society for Testing Materials

Copper and Copper-Base Alloy Forging Rods, Bars and Shapes (ASTM B124-49; ASA H7.1-1949) $.25

Free-Cutting Brass Rod and Bar for Use in Screw Machines (ASTM B16-49; ASA H8.1-1949) $.25

Specifications for Slab Zinc (ASTM B6-49; ASA H24.1-1949) $.25

Bronze Castings in the Rough for Locomotive Wearing Parts (ASTM B66-49; ASA H28.1-1949) $.25

Car and Tender Journal Bearings, Lined (ASTM B67-49; ASA H29.1-1949) $.25

Copper-Silicon Alloy Wire for General Purposes (ASTM B99-49; ASA H30.1-1949) $.25

Brass Wire (ASTM B134-49; ASA H32.1-1949) $.25

Leaded Red Brass (Hardware Bronze) Rods, Bars and Shapes (ASTM B140-49; ASA H33.1-1949) $.25

Sponsor: American Society for Testing Materials

In Standards Council—

Abbreviations for Use on Drawings, Z32.13 (Revision of Z32.13-1946)

Sponsors: American Institute of Electrical Engineers; American Society of Mechanical Engineers

In Board of Review—

Lock Washers, B27.1 (Revision of B27.1-1944)

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

In Correlating Committee—

Seamless Alloy-Steel Pipe for High-Temperature Service (ASTM A158-49T; ASA B36.21)

Sponsor: American Society for Testing Materials

Recommended Practice for Mechanical Refrigeration Installations on Shipboard, B59

Method of Rating and Testing Refrigerant Expansion Valves, B60

Sponsor: American Society of Refrigerating Engineers

Submitted to ASA for Approval—

Involute Splines, B5.15
Sponsors: American Society of Mechanical Engineers; National Machine Tool Builders' Association; Metal Cutting Tool Institute; Society of Automotive Engineers

Withdrawal of American Standards Requested—

Outside Dimensions of Plumbago Crucibles for Non-Tilting Furnaces in Non-Ferrous Foundry Practice, H13-1925
Requested by: Crucible Manufacturers Association; American Foundrymen's Society

Motion Picture

In Correlating Committee—

Scanning Beam Uniformity Test Film for 16-mm Motion Picture Sound Reproducers (Laboratory Type), Z22.80 (Revision of Z52.7-1944)
Scanning Beam Uniformity Test Film for 16-mm Motion Picture Sound Reproducers (Service Type), Z22.81 (Revision of Z52.7-1944)
Sponsor: Society of Motion Picture and Television Engineers

Withdrawal of American War Standards Requested—

Method of Determining the Signal-to-Noise Ratio of 16-mm Sound Motion Picture Prints, Z52.38-1944
Method of Determining the Noise Level of Motion Picture Cameras, Z52.60-1945
Withdrawal requested by: Society of Motion Picture and Television Engineers

Petroleum

American Standards Just Published—

Sulfur in Petroleum Products and Lubricants by the Bomb Method, Method of Test for (ASTM D129-49; ASA Z11.13-1949) $.25
Saponification Number of Petroleum Products by Color-Indicator Titration, Method of Test for (ASTM D94-48T; ASA Z11.20-1949) $.25
Color of Refined Petroleum Oil by Means of Saybolt Chromometer, Method of Test for (ASTM D156-49; ASA Z11.35-1949) $.25
Vapor Pressure of Petroleum Products (Reid Method), Method of Test for (ASTM D323-49; ASA Z11.44-1949) $.25
Tetraethyllead in Gasoline, Method of Test for (ASTM D526-48T; ASA Z11.48-1949) $.25
Sponsor: American Society for Testing Materials

Photography

American Standards Just Published—

Shutter Cable Release Tip and Socket With Taper (European) Thread, Z38.4.5-1950 Revision of Z38.4.5-1942) $.25
Shutter Cable Release Tip and Socket With Straight (American) Thread, Z38.4.6-1950 (Revision of Z38.4.6-1942) $.25
Picture Sizes for Roll Film Cameras, Z38.4.8-1950 (Revision of Z38.4.8-1944) $.25
Requirements for Photographic Wetting Agents, Z38.8.14-1950 $.25
Method for Determining Residual Thiosulfate and Tetrathionate in Processed Photographic Papers, Z38.8.25-1950 $.35
Lens Aperture Markings, Z38.4.7-1950 (Revision of Z38.4.7-1943) $.25
Sponsor: Optical Society of America

American Standards Approved—

Dimensions for Amateur Roll Film, Backing Paper and Film Spools, Z38.1.7-1950 (Revision of Z38.1.7-1943 through Z38.1.24-1943)
Sponsor: Optical Society of America

In Correlating Committee—

Procedure for Determining the Safety-Time of Photographic Darkroom Illumination, Z38.8.13
Photographic Filing Envelopes for Storing Processed Photographic Films, Plates, and Papers, Z38.8.21
Dimensions for Lantern Slides, Z38.7.19 (Revision of Z38.7.13-1944)
Sponsor: Optical Society of America

Safety

American Standards Just Published—

Code for Identification of Gas Mask Canisters, K13.1-1950 (Revision of K13-1930) $.35
Sponsor: National Safety Council
Dust Explosions, Z12 $3.00
(The following revisions of 3 of the 17 codes included in this volume were approved this year)
Safety Code for the Prevention of Dust Explosions in Terminal Grain Elevators, Z12.4-1950 (Revision of Z12.4-1942)
Safety Code for the Prevention of Sulphur Dust Explosions and Fires, Z12.12-1950 (Revision of Z12.12-1946)
Safety Code for the Prevention of Dust Ignitions in Country Grain Elevators, Z12.13-1950 (Revision of Z12.13-1946)
Sponsor: National Fire Protection Association

In Board of Review—

Safety Code for Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways, Z26.1 (Revision of Z26.1-1938; Z26.1a-1948)
Sponsors: National Bureau of Standards; Accident Prevention Department of the Association of Casualty and Surety Companies

In Correlating Committee—

Safety Code for Mechanical Refrigeration, B9 (Revision of B9-1939)
Sponsor: American Society of Refrigerating Engineers

Textiles

American Standards Just Published—

Methods of Testing and Tolerances for Jute Rope and Plied Yarns for Electrical Packing Purposes (Revision of ASTM D681-48; ASA L14.44-1949) $.25
Sponsor: American Society for Testing Materials

Library

(Continued from page 140)

some of their imports. In addition to European standards, Israel, India, China, Japan, South Africa, New Zealand, Australia, South American countries, and others have supplied reference copies of their standards for the use of the American Standards Association.

The ASA library obtains copies of foreign standards in return for copies of American Standards. It is significant of the ever-growing importance of standardization that many of the agencies of the United Nations are concerned with standards in much of their work. It became a matter of great importance, therefore, that effective cooperation should be established between these agencies of the UN and the International Organization for Standardization.

Eliminates Confusion

Another service of the library is to clarify the confusion that is commonly encountered because of the profusion of American standardizing groups, their numbering systems, possibility of variations between inter-related standards, and other factors. Questions about standards are often confused and have to be clarified before they can be intelligently answered. The elimination of this confusion is one of the purposes of ASA. On the other hand, irrelevant questions are not welcomed, even though they may apply to a standard. For example, a standard on paper bag sizes contained dimensions of folded bags which were sufficient for computing the volume of the bags when opened. Although this volume was cheerfully worked out for one caller, such questions waste librarians' time, especially in view of the time limitations on supplying more significant information.

Dependable Information

Wherever standards are concerned, and in whatever field, ASA and its library comprise one of the most dependable sources of information. American Standards include such varied subjects as (1) dimensions for interchangeability of parts or equipment, (2) specifications of materials and methods of test, (3) definitions of technical terms used in industry, (4) industrial and public safety and health codes, (5) building code standards, (6) specifications for consumer goods sold in retail stores, and even (7) the pitch of musical instruments.

News Briefs

• • Massachusetts Institute of Technology is inaugurating the study of standardization on a classroom basis in the Fall. The Department of Business and Engineering Administration headed by Professor Erwin H. Schell is pioneering in presenting this full-term subject as a part of its regular curriculum.

Leo B. Moore, who is in charge of the subject, has spent several years visiting companies and individuals throughout the country to discuss standardization in all of its phases. These visits and his own experience in the field have convinced him of the importance of managerial support in the work of the standards engineer. He is certain that the attitude of management largely determines the opportunity which a standards engineer has to put his program into effect.

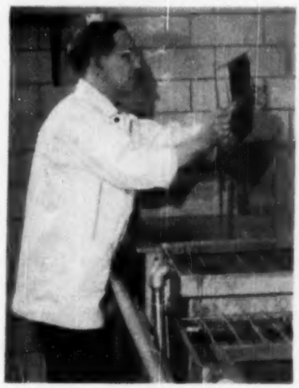
Mr Moore plans to stress the initiation, organization, and maintenance of a standardization program with this factor of managerial support in mind. The subject will also include a discussion of the relationship of standardization to other phases of business management, and particularly, its value to the operating organization.

In commenting on his plans, Mr Moore stated: "It is my hope and desire that through this educational endeavor, standardization will assume its rightful place as a vital tool in industrial administration. To this end I shall welcome the advice and experience of others who have concerned themselves with standardization in any of its operating aspects."

• • Probably everyone at one time or another has had the unhappy experience of finding that some of his favorite photographic prints have discolored or faded. If he has, he will be interested in a new American Standard test for determining how much thiosulfate and tetrathionate remain in the print after it has been processed and washed. The test will help photographers in selecting prints that will retain their color and sharpness for a greater length of time since these salts form silver sulfide which fades the image or results in a general brown stain, or both.

The new American Standard test will also help those who are responsible for processing photographic prints by enabling them to control and evaluate the processing during their work.

The processes recommended were based on research and technical discussions going back to 1819. Collaborating in the history and development of the use of silver nitrate as a spot test for thiosulfate, which work forms the basis for this standard, is J. I. Crabtree of the Eastman Kodak Company. Mr. Crabtree is chairman of the subcommittee which developed this new American Standard.



Older methods for the attempted determination of thiosulfates in paper prints by testing either the wash water dripping from the prints, or titrating water in which the prints were soaked, are unsatisfactory and inaccurate since hypo is frequently retained or absorbed by the paper base, the committee has explained.

This American Standard is part of a series being developed by the Sectional Committee on Photography, Z38, sponsored by the Optical Society of America under the procedure of the American Standards Association. Other American Standards in the series, recently approved by ASA, cover: shutter cable release tip and socket with both taper (European) thread and straight (American) thread, picture sizes for roll film cameras, requirements for photographic wetting agents, and lens aperture markings.

Copies of these new American Standards for photographic equipment and processes can be obtained from the American Standards Association as follows:

American Standard Method for Determining Residual Thiosulfate and Tetrathionate in Processed Photographic Papers, Z38.8.25-1950, 35 cents

American Standard Shutter Cable Release Tip and Socket With Taper (European) Thread, Z38.4.5-1950, 25 cents

American Standard Shutter Cable Release Tip and Socket With Straight (American) Thread, Z38.4.6-1950, 25 cents

Picture Sizes for Roll Film Cameras, Z38.4.8-1950, 25 cents

Requirements for Photographic Wetting Agents, Z38.8.14-1950, 25 cents

Lens Aperture Markings, Z38.4.7-1950, 25 cents

• • Drycleaners have spoken up in their own behalf to encourage action that will help them prevent loss to themselves and their customers from rayon fabrics that shrink, stretch, discolor, or fade during cleaning. Calling for the American Standards Association to continue work on standard tests and performance requirements, the drycleaners said they would benefit immeasurably if rayon fabrics were labeled and identified as to performance. The National Institute of Cleaners and Dyers adopted a resolution to this effect at its 41st Annual Convention March 15. The standards referred to are now being considered by the groups cooperating in the work of the committee. The resolution, quoted in part below, was forwarded to the ASA Sectional Committee on Rayon Fabrics, L22, sponsored by the National Retail Dry Goods Association:

WHEREAS, Drycleaners everywhere have experienced difficulty in the handling of rayon textile products which do not have

the necessary properties to withstand the cleaning operations required to produce the quality of service that customers expect, and have long recognized the need for textile standards that would serve to guide manufacturers in the production of fabrics which have the minimum requirements for cleanability, and

WHEREAS, Minimum standards covering the performance requirements of rayon fabrics used in the manufacture of such products as men's wear, women's wear, and home furnishings have been developed through the American Standards Association under sponsorship of the National Retail Dry Goods Association in cooperation with all branches of industry and other interested groups . . ., and

WHEREAS, The drycleaning industry would benefit immeasurably if rayon fabrics were properly labeled and identified as to performance, and

WHEREAS, The National Institute of Cleaning and Dyeing has been represented on all of the special committees charged with developing the standards and its own technical committee has reviewed the provisions covering cleanable fabrics; now, therefore, be it

Resolved, That the officers and members of this association, in convention assembled, go on record as encouraging the American Standards Association to continue the work they are doing in formulating standards and minimum specifications for testing and labeling rayon fabrics, and be it further

Resolved, That a copy of this resolution be forwarded to the chairman of the Sectional Committee on Rayon Fabrics of the American Standards Association.

• • The new Chemical Industry Correlating Committee held its organization meeting May 5 and elected J. G. Henderson, Carbide and Carbon Chemicals Division, Union Carbide and Carbon Corporation, South Charleston, West Virginia, chairman. Mr Henderson represents the Manufacturing Chemists Association. Jas. C. Lawrence, Engineering Department, E. I. duPont de Nemours & Company, Wilmington, Delaware, (representing the American Institute of Chemical Engineers) was elected vice-chairman. C. E. Hilton, ASA staff, will serve as secretary.

J. G. Henderson

The committee has already started work by naming a subcommittee to list those standards and projects that are of special interest to the chemical industry. A survey will then be made to determine whether the chemical industry is adequately represented on committees where it has an important interest.

Jas. C. Lawrence

The committee is confining its work to equipment and products the industry uses in construction, maintenance, and operation of its production facilities. Its studies will include pipe, pipe fittings and flanges, thin-wall tubing, pressure vessels, and similar products.

The fact that standards have been issued for pipe and other products with inadequate provision for materials and sizes needed by the chemical industry has cost companies in the industry many thousands of dollars, representatives explained. They believe much of this loss can be prevented by the work of this committee in providing machinery through which the viewpoint of the industry can be coordinated and presented during preparation of standards.

The Chemical Industry Correlating Committee expects to work closely with other ASA correlating committees, particularly the Mechanical Standards Committee and the Electrical Standards Committee.

Organizations represented on the committee are: Manufacturing Chemists Association; American Institute of Chemical Engineers; American Petroleum Institute; American Society for Testing Materials; Synthetic Organic Chemical Manufacturers Association; American Society of Mechanical Engineers.

• • Frank T. Ward, representing the American Transit Association, has just been re-elected chairman of the Mechanical Standards Committee. The committee supervises ASA projects in the mechanical engineering field. L. W. Kattelle, assistant chief engineer, Walworth Company, has been elected vice-chairman to succeed F. O. Hoagland of Pratt and Whitney who has retired. Mr Kattelle represents the Manufacturers Standardization Society of the Valve and Fittings Industry on this committee.

J. R. Townsend, materials engineer, Bell Telephone Laboratories, and Charles M. Parker of the American Iron and Steel Institute have been re-elected to the executive committee. Mr Townsend represents the American Society for Testing Materials. The three new members of the committee are: Alton G. Knight, chief engineer, Handy Machine Company (representing the National Machine Tool Builders Association); A. Rousseau, Abrasive Division, Sales Engineering Department, Norton Company (representing the Grinding Wheel Institute); and Frank P. Tisch, chief engineer, Pheoll Manufacturing Company (representing the American Society of Mechanical Engineers).

• • An abbreviated edition of the National Board of Fire Underwriters' Fire Prevention Code is now available, as a companion document to the abbreviated National Building Code which was issued several months ago.

Included in the booklet is a "model ordinance" by which the Code may be adopted by title where state laws permit. The Code is offered as a public service of the capital stock fire insurance companies, and copies are available from the National Board of Fire Underwriters, 85 John Street, New York City, 222 West Adams Street, Chicago, or 1014 Merchants Exchange Building, San Francisco, California.

Federal Group Correlates Standards Policy

SIXTEEN Federal agencies have designated high-level officials to represent them on an Interdepartmental Standards Council, which provides machinery for the development of policy on national and international standardization matters of significance to the United States Government. The Council meets monthly with S. P. Kaidanovsky, of the Federal Supply Service, General Services Administration, as chairman.

Terms of Reference under which the Council is operating are:

1. Study governmental policy on national and international standardization matters in broad commodity fields and technical practices, and recommend to proper authorities such measures of coordination and such changes in policy or statute as may be found necessary.

2. Study and recommend appropriate channels for maintaining contact and coordinating the exchange of information between the U.S. and foreign governments, and among the recognized groups and technical organizations within the U.S. Government and industry concerned with standardization matters affecting broad commodity fields and technical practices.

The Council is not an operating group, Willis S. MacLeod, Director, Standards Division, Federal Supply Service, General Services Administration explains, but one in which any standardization problem of Government-wide interest may be discussed. The Council can and will recommend to the General Services Administrator, and through him to Government agencies, such actions as appear justified on standardization problems. It will crystallize Government viewpoints on specific standardization projects, and assist the State Department with advice on standardization matters which concern its international negotiations with foreign governments. It will be instrumental, Mr MacLeod indicates, in preventing duplicative work by Government agencies on standardization projects; will utilize the standardization work of specific agencies; and determine which agency is best prepared to perform standardization work in a particular field. The Council offers the medium through which technical societies, associations, and industry groups may contact the Federal government on specific standardization problems. It is not intended to discourage contacts which now exist between these groups and Federal agencies, and which are proving invaluable to both industry and Government.

Furthermore, the Council intends to avoid any disruption of the existing standardization work of Federal agencies, and will not interfere in any way with the standardization work being conducted by these agencies under statutory authority. It intends to coordinate standardization activities, and through its facilities to acquaint Federal agencies with matters of interest to them and the available standards which result. In general, Mr MacLeod reported, the Council will assist in coordinating and correlating the work of other agencies in this field.

It is planned that arrangements will be made whereby the Council can serve as a contact between technical societies and the Government on mutual problems of standardization.

The agencies represented on the Council are:

Economic Cooperation Administration, Department of Agriculture, Department of Commerce, Post Office Department, Department of Labor, Housing and Home Finance Agency, Bureau of the Budget, Department of Defense, Federal Communications Commission, Veterans Administration, Government Printing Office, Department of State, Federal Security Agency, Department of the Interior, National Security Resources Board, General Services Administration.

IEC Meetings Scheduled

Technical committees of the International Electrotechnical Commission will meet in Paris and London from July 10 to 21. Committee 5 on Steam Turbines meets in London, July 6 and 7. Committees meeting in Paris are:

Committee of Action—July 21
Graphical Symbols (AC 3)—July 10, 11, 12
Radio Communication (AC 12)—July 13, 15, 17
Switchgear (AC 17)—July 12, 13, 15
Wiring Devices (AC 23)—July 17, 18
Electric and Magnetic Magnitudes and Units (AC 24)—July 17, 18
Coordination of Insulation (AC 28)—
Subcommittee on Vocabularies—July 10
Subcommittee on Lightning Arresters—July 11
Power Fuses (AC 32)—July 19, 20, 21
Power Capacitors (AC 33)—July 10, 11
Electric Lamps (AC 34a)—July 19, 20
Dry Cells and Batteries (AC 35)—July 20, 21
International Special Committee on Radio Interference (CISPR)—July 10, 11, 12

Delegates already named to attend these meetings are:

P. H. Chase, Chief Engineer, Philadelphia Electric Company, Philadelphia, Pa., Vice-President of the United States National Committee
Dr A. G. Christie, Director, School of Engineering, Johns-Hopkins University, Baltimore, Md.
George Sutherland, Woodbury, Conn. (Technical Advisor to Committee 17 on Switchgear and 32a on Fuses)
Dr J. J. Smith, General Electric Company, Schenectady, N. Y.
Professor Rudenberg, Harvard University, Cambridge, Mass.
Professor E. E. Bennett, Consulting Engineer, Madison, Wisc.
Professor H. M. Turner, Yale University, New Haven, Conn. (Professors Bennett and Turner are joint technical advisors to Committee 25 on Letter Symbols)
E. H. Salter, Electrical Testing Laboratories, New York
Dr C. C. Chambers, University of Pennsylvania, Philadelphia, Pa.
L. W. Thomas, Navy Department, Bureau of Ships, Washington, D. C.
H. E. Dinger, Naval Research Laboratories, Anacostia, D. C.
H. H. Beizer, Signal Corps, Department of the Army, Fort Monmouth, N. J.
Dr R. I. Sarbacher, National Scientific Laboratories, Washington, D. C.
E. F. Seaman, Navy Department, Washington, D. C.

Mr Chase will serve as chairman of the delegation, and J. W. McNair, Electrical Engineer, American Standards Association, will be its secretary.

• • Testing and quality control of goods produced in Pakistan, particularly those for export, is foreseen as the result of a visit by H. M. Block, vice-president of the United States Testing Company. Mr Block left the United States March 17 on a technological mission to study the installation of testing laboratory facilities in Pakistan.

• • The American Standards Association announces the approval of three new American Standards for fine-pitch gears covering straight bevel gears; design for worms and worm gears; and 20-degree involute

system for spur and helical gears.

They are part of the gear standardization program developed by a committee organized under the procedure of the American Standards Association, and sponsored by the American Gear Manufacturers Association and the American Society of Mechanical Engineers.

These standards were originally developed by the AGMA during the war years in answer to the great demand for mass production of small gears of high precision. Fine-pitch gears are essential in the manufacture of computing devices, fire control instruments, small automatic mechanisms and other precision instruments.

The technical content of the new American Standard Fine-Pitch Straight Bevel Gears is almost identical with that of the AGMA standard. Modifications are: The clearances have been increased, the tooth thicknesses now correspond to those generated by a crown gear in which the tooth thickness and space width are equal, and the maximum face width is limited to three tenths of the cone distance, or $\frac{8}{p}$ in., whichever is smaller. The standard covers generated straight bevel gears of 20 diametral pitch and finer, all shaft angles, and with the numbers of teeth equal to or greater than 16/16, 15/17, 14/20, 13/30 for 90-degree shaft angle.

Interchangeability and high production are important factors in fine-pitch worms and worm gears. The new American Standard for fine-pitch worm gearing is a design procedure covering worms and worm gears with axes at right angles, comprising cylindrical worms and helical threads, the worm gear being hobbed for fully conjugate tooth surfaces.

The American Standard 20-Degree Involute Fine-Pitch System is very similar to the American Standard for Spur Gear Tooth Form, but has a slight increase in whole depth to allow for the greater proportional clearance necessary in fine-pitch gears. The fine-pitch series includes gears of 20-diametral pitch and finer having a 20-degree pressure angle.

These American Standards are being published by the American Society of Mechanical Engineers and when available may be obtained from the ASME, 29 West 39 Street, New York 18, N. Y. or from the American Standards Association, 70 East 45 Street, New York 17, N. Y.

• • A compilation of more than 300 Graphical Symbols for Railroad Use has been approved as a new American Standard, Z32.2.5-1950. Most of these symbols had been developed originally by the American Railway Engineering Association, which is the Construction and Maintenance Section of the Association of American Railroads.

The new expanded standard symbols represent various types of vegetation, hydrography, ground contours, fences, highways and crossings, boundaries, ballasts, bridges, tunnels, buildings, signals, signs, switches, and many other items encountered in railroad engineering.

A few of the symbols, particularly for pipe fittings and valves, conflict with those in other American Standards. However, it is believed that no confusion will occur and that desired correlation can be attained gradually in subsequent revisions.

Copies are available from the American Standards Association or the American Society of Mechanical Engineers, at 75 cents each.

Sponsors are the American Institute of Electrical Engineers and the American Society of Mechanical Engineers.

• • A revision of the American Standard for Relays Associated with Electric Power Apparatus (C37.1-1950) reflects progress since 1937. In general, it includes new performance data such as fidelity of characteristics as affected by temperature, operating currents and voltages, wave form, and other factors; especially response to distance-type elements within certain limits of low voltage, high current, and phase-angle deviations.

Single copies of the revised standard are available at 60 cents from the American Standards Association.

Limits of temperature rise are now based on an ambient temperature of 40 C instead of "above cooling air." The table of limits of temperature rise for coils no longer includes coils with Class O insulation but such limits have been added for wire wound coils with Class H insulation. These are 130 C rise by the thermometer method of measurement and 135 C rise by the resistance method. Permissible temperature rise of wire-wound coils with Class A insulation was slightly reduced. No changes were made in requirements of Classes B and C insulation.

The revision was prepared by the American Institute of Electrical Engineers Relay Committee.

• • New developments in grandstand construction are recognized in the latest edition of the American Standard for Places of Outdoor Assembly, Grandstands and Tents (Z20.3-1950). This standard adopts, by reference, the latest industry specifications for light-gage steel, for stress-grade lumber, and also permits use of steel pipe and tubular steel members in grandstands. Specifications for two new types of seating arrangements which have come into general use since the last edition are now incorporated into the standard—the foldable-type grandstand, and the trailer-mounted-seating arrangement used by the circus industry.

This standard is a revision and

synthesis of two previous American Standards—Portable Steel and Wood Grandstands, Z20.1-1941, and Places of Outdoor Assembly, Grandstands and Tents, Z20.2-1949. Administrative experience in applying the provisions, and recognition of new developments in the field, led to the revision of these two standards.

Copies may be purchased from the American Standards Association, or from the National Fire Protection Association at 25 cents.

A question of interpretation of the requirements for the width of aisles arose after publication of the previous edition. This is clarified in the appendix of the present standard, in order to aid enforcement officials. The standard itself states that distance from any seat to the nearest exit on the seating area shall be not more than 150 feet. Recognizing the variation in size and shape of different permanent structures this section is now interpreted to mean that "persons shall be able to get out of any threatened area by traveling not more than 150 feet."

This standard was sponsored by the National Fire Protection Association and the Building Officials Conference of America.

• • The National Bureau of Standards has announced the endorsement of the "height-weight" system of apparel sizing by another segment of the boys' apparel industry — the trouser segment. The new title is Body Measurements for the Sizing of Boys' Apparel (Knit underwear, shirts, trousers), Commercial Standard CS155-50. The sizes covered are 2 to 20.

The purpose of the commercial standard is to make available to producers, distributors, and users a nationally recognized system of sizing boys' apparel — a height-weight system — for coordinating body measurements of the boy with his clothing sizes and for determining proper gradations between sizes of garment patterns and specifications.

The printed copies of Commercial Standard CS155-50 will temporarily be held in abeyance, until other affected segments of the apparel industry have had an opportunity to indicate the extent of their support. In the meantime multilithed copies can be obtained from the Commodity Standards Division, National Bureau of Standards, Washington 25, D. C.

• • A new American Standard, High Strength, High Temperature Internal Wrenching Bolts, approved recently covers bolts intended for applications where high strength is required under high temperature conditions, such as in steam turbine assemblies. The bolts have a round head with a hexagonal recess, the head being larger than that of regular socket head screws. When the round bolt head is located in a counterbore it may be peened to lock it against rotation.

Copies of B18.8-1950 are available at 35 cents each from ASA or from the American Society of Mechanical Engineers.

The American Standard lists bolts in nominal diameters from 3/8 to 2 in. Bolts up to 7/8 in. inclusive have coarse threads, and larger bolts, 8-pitch threads according to the American Standard B1.1-1949.

Sponsors are the American Society of Mechanical Engineers and the Society of Automotive Engineers.

• • Several of the model codes being prepared by the International Labor Office have now been completed and others have been started. A Model Code of Safety Regulations for Underground Work in Coal Mines is designed to help governments and industry in coal-producing countries in the framing and applying of safety laws and regulations. The Model Code of Safety Regulations for Industrial Establishments has also been completed. Work has now been begun on a model code of civil engineering regulations, and on a model code for the chemical industry. In addition, the ILO has undertaken a study of the law and practice relating to coal mine safety throughout the world.

• • Improvement in chimney design and construction in keeping with the improvement in house-heating equipment is greatly needed, according to Technical Paper No. 13, *Performance of Masonry Chimneys for Houses*, published by the Housing and Home Finance Agency. The paper will be one of the documents used by Sectional Committee A52 on Building Code Requirements for Chimneys and Heating Appliances in developing a proposed standard. It presents data collected under an investigation of masonry chimney construction, together with conclusions for improvement in the design and construction of such chimneys. The laboratory research forming the basis for the paper was performed as a joint undertaking by the HHFA and the National Bureau of Standards, Department of Commerce.

A few copies of Technical Paper No. 13 are available from ASA.

• • The National Bureau of Standards has recently developed a primary neutron standard which makes it possible for all laboratories to measure neutron radiation intensities in terms of a common reference value. The neutron standard consists of a solid beryllium sphere, 4 centimeters in diameter, enclosing at its geometrical center a capsule of radium. The capsule is made of platinum-iridium closely fitted to a gram of radium bromide compressed to maximum density. Neutrons are produced in the beryllium sphere by the action of gamma rays from the radium. Preliminary measurements indicate that the standard emits 1.1 million neutrons per second. The rate of neutron emission will change slowly as the radium decays, but this change is only about 0.04 percent a year and can be taken into account with sufficient accuracy.

A duplicate standard has been prepared for loan to other research laboratories requiring standardization of their neutron measurements.

Standard Marking for Gas Mask Canisters

Do you know

Photos of sample canisters courtesy of Mine Safety Appliances

American Standard identification?

Just published, the American Standard Safety Code for Identification of Gas Mask Canisters, K13.1-1950, should be "required reading" for anyone who may be called on to make quick and accurate choice of industrial gas mask equipment. This important revision of a tried and proven safety code lists previously authorized colors and mode of identification, with additional information covering protection against hydrocyanic acid gas and chlorine gas. See page 139 of this issue of STANDARDIZATION for a complete story on the development and use of this important American Standard Safety Code. Special price reductions for orders of ten or more copies. Single copies, each $.35.

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For your copies of the American Standard Safety Code for Identification of Gas Mask Canisters, fill out order blank and return to:

American Standards Assn.

70 East 45th Street, New York 17, N. Y.